



**WARNING!**

**DO NOT USE WITH ENRICHED AIR SYSTEMS, ABOVE 21% OXYGEN**  
(the use of enriched air, above 21% oxygen, will void manufacturer's warranty)



## High Pressure Breathing Air Compressors

**Max-Air 90 SFD 6000**

**9.0 cfm**

### Owner's Operating Manual & Parts List

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Thank you for choosing MAX-AIR, where quality and commitment give you the best in technology and support available today. Be sure to ask your MAX-AIR dealer about our complete line of compressors and accessories.

This owner's manual uses signal words recommended by the American National Standards Institute (see ANSI Z535.4) to designate levels of hazards. These signal words and their definitions are as follows:

**DANGER** This warning indicates a very hazardous situation, which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations.

**WARNING** indicates a potentially hazardous situation, which if not avoided, could result in death or serious injury.

**CAUTION** indicates a potentially hazardous situation, which if not avoided, might result in minor or moderate injury. It is also used to alert against unsafe practices.

## NOTICE

Follow manufacturers recommendations and cautions, of drive engines and electric motors. Carefully read and follow these instructions prior to operation of your compressor.

## CAUTION

As a new owner of a cylinder-filling compressor you are now "a filling station." You must follow all local, state and federal regulations. Prior to filling a cylinder, check the pressure rating and current hydro date stamped on cylinder neck. Do not fill out-of-date, (hydro-date) cylinders for anyone. You should also control that you and your buddies have a valid scuba certification, nationally and/or internationally accepted and issued by a recognized instructional agency.

## GENERAL

In the interest of health and safety, we strongly recommend that you follow these operating instructions precisely. Damage resulting from any deviation from these operating instructions is excluded from the warranty and liability of **Max-Air**.

### Special Attention Must Be Paid To The Following:

**a) Correct maintenance of the filtering system.**

**b) Regular drainage of the condensate.**

When opening the condensate drain tap, both condensate and air should escape profusely. Contaminated or wet filters result in contaminated air.

**c) Fill "in test" air cylinders only. Normal rated operating pressures must not be exceeded.**

**d) Air intake.**

The intake of exhaust gases (e.g. from the driving motor) could have fatal consequences. When operating the compressor, ensure that the air intake draws clean air and cannot be contaminated by noxious exhaust gases.



**YOU MUST READ AND UNDERSTAND THIS INFORMATION PRIOR TO FILLING BREATHING AIR CYLINDER!!**

**BREATHING AIR PURIFICATION FILTER CARTRIDGE (DISPOSABLE) Part Number LF-1002 or X302414**

Fits only compressor model Max-Air 55 and Max-Air 90 with standard filtration  
(Part Number PU-10000)

Typical processing capacity (cartridge life) @ 72°F intake temperature for  
Grade "E" breathing air SCUBA or SCBA @ 5000 psi.

Compressor model Max-Air 55 = 10,000 cubic feet (or prox 30 hours of running time)

Compressor model Max-Air 90 = 10,000 cubic feet (or prox 18 hours of running time)

**MAKE SURE WHENEVER CHECKING FILTRATION THAT THE SYSTEM IS SHUT OFF AND COMPLETELY DRAINED OF AIR PRESSURE**

**NOTE:**

1. The cartridge life is based on 72°F intake temperature, draining the condensate every 15 minutes or more often if in hot and humid climate.
2. The 10,000 cubic feet must be de-rated by 2% for every 1°F above 72°F.  
The reverse applies to temperatures below 72°F.

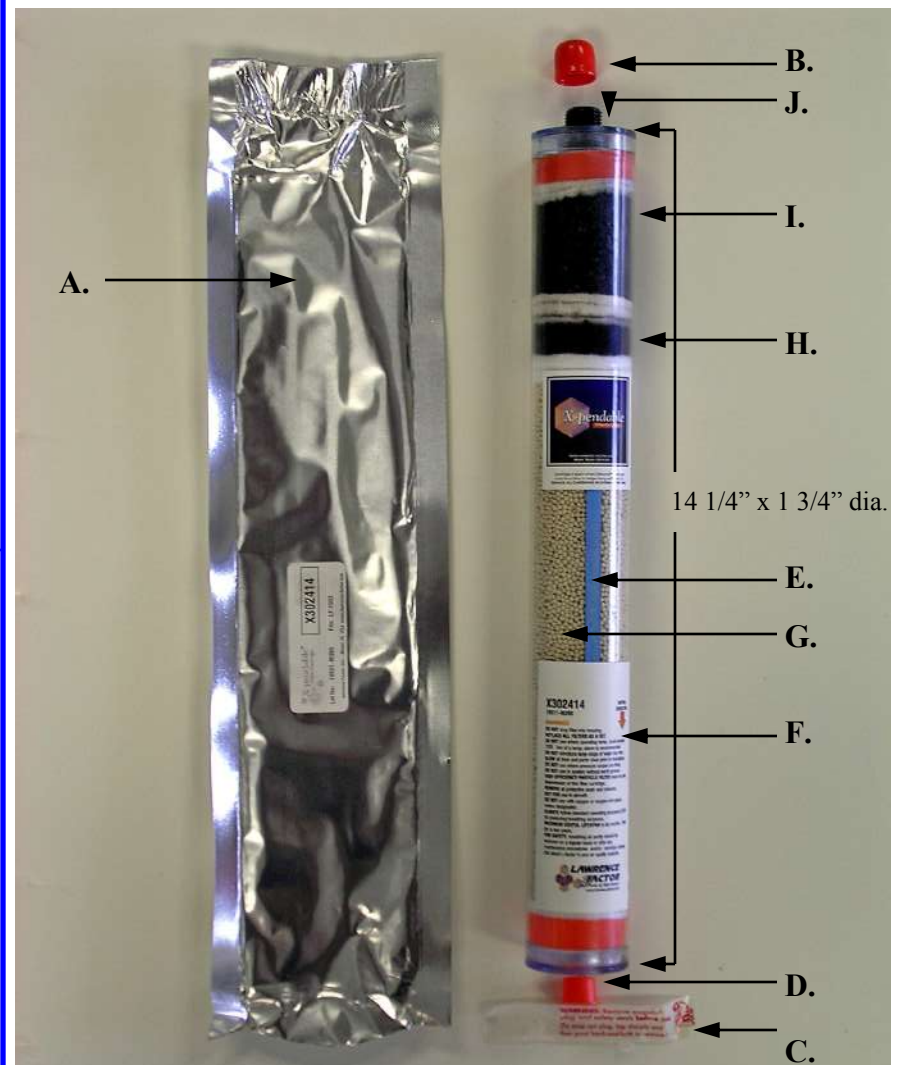
- i.e.
- @ 82°F decrease capacity by 20%
  - @ 92°F decrease capacity by 40%
  - @ 102°F decrease capacity by 60%

**DO NOT use where temp. could exceed 120°F.**

**CARTRIDGE COMPONENT IDENTIFICATION:**

- A. Sealed foil envelope –makes sure it is not torn or punctured.  
Do not open until ready to install. For extended storage re-wrap in two or three heavy duty zip lock bags. Store in a cool, dry, dark place.
- B/C/D/ Remove and dispose of protective cap B & D and tape C prior to installing or filter will not function and may implode in filter housing, causing extensive damage to the compressor and contaminating the air.
- E. LifeBand™ changes color from blue to beige along entire length.  
Replace **ALL** cartridges in system at this time. It is advisable to pull out cartridge every 5 hours to inspect LifeBand™ and for any sign of moisture.
- F. Warning label read and understand this and any labels on the filter.
- G. Molecular sieve (beige beads) removes humidity
- H. Hopcalite catalyst converts trace amounts of carbon monoxide to carbon dioxide
- I. Activated charcoal removes bad odors and taste of lubricant
- J. O'ring seal – make sure the O'ring is in place and in good condition.

- **Maximum cartridge life, once installed, is six months regardless if it has not reached the full processing capacity.**
- **Maximum shelf life in unopened package is two (2) years**



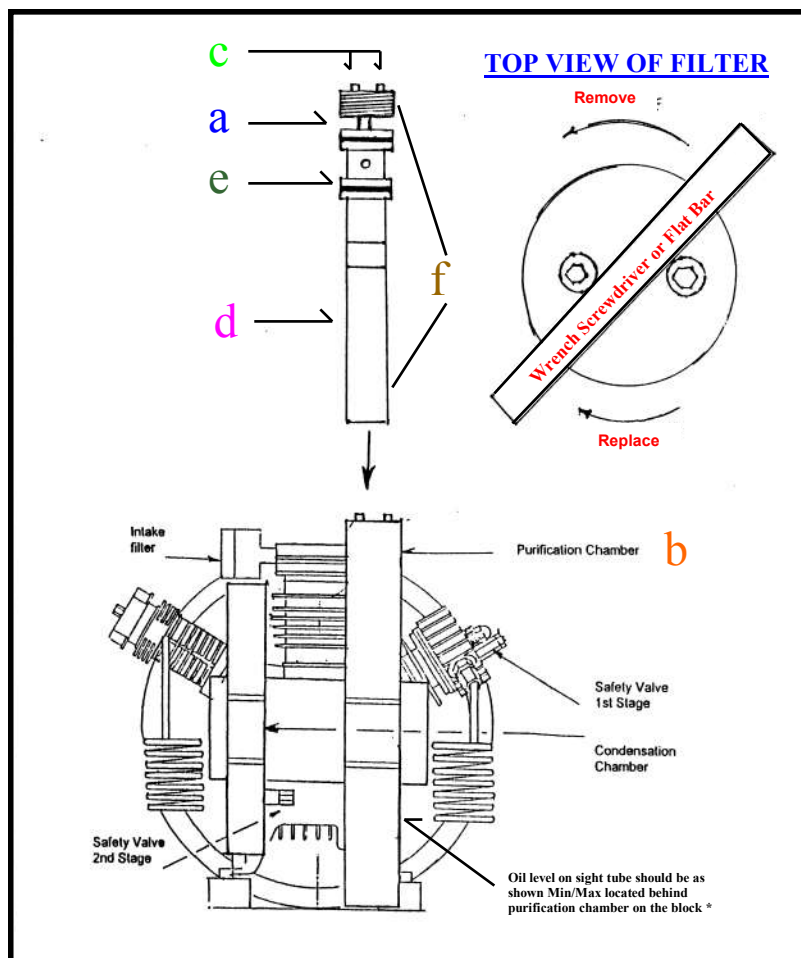
**Part Number LF-1002 or X302414 - 10,000 cft @ 72°F @ 5000psi**

**NOTE: Dimensions exclude threaded plastic nipple w/O'ring**



## PURIFICATION FILTER CARTRIDGE REMOVAL & INSTALLATION For Max-Air Compressor Models 55-70-90-180

1. **MAKE SURE** that the power is OFF and that all air pressure (high and low) is completely drained (bled) from the system.
2. In a counter clockwise motion remove the pressure cap assembly "A" from the purification chamber "B" by inserting a wrench, screw driver or flat bar between the two protruding Allen screws "C". **DO NOT REMOVE THESE SCREWS OR THE CENTER LARGE ONE** as they are simply for leverage. Remove plastic filter cartridge "D" by unscrewing by hand, counter clockwise, while holding the double sealed, sealer cap "E" with the other hand, dispose of cartridge "D" as indicated on cartridge. If you must lay down pressure cap "A" & "E" make sure it is NOT in contact with sand, dust or dirt. It is recommended to thoroughly clean and re-grease the threads of cap "A" and O-rings of sealer cap "E" prior to reinstallation. Follow instructions marked on replacement filter "D". Remove both orange plastic end plugs or you will not make air. Tighten cartridge snugly onto sealer cap "E" so that it will not back out with vibration. Tighten the entire assembly "F" into chamber "B" in a clockwise motion until it stops. Then back out 1/8 of a turn. **DO NOT** leave it tight and run compressor, as it can seize inside the chamber.



**\*Note: For cabinet models the procedure is the same. The oil level sight glass is located on the panel and not on block, as shown above. If the filter is externally mounted, follow above instructions.**



## Compressor Pumping Group Identification Sheet

### Model Max-Air 55, 90 and 180 Twin

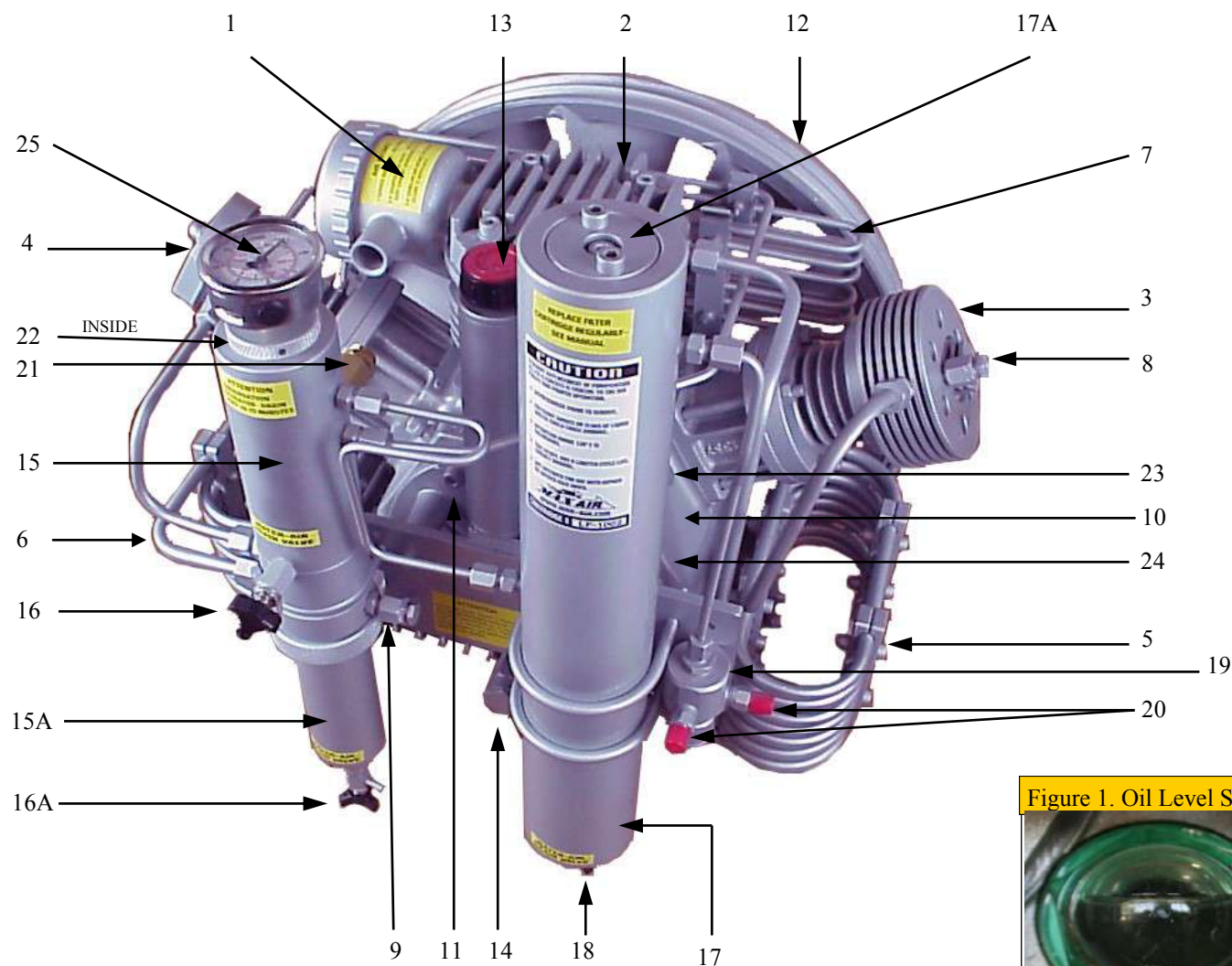


Figure 1. Oil Level Sight Glass



- |                                     |  |
|-------------------------------------|--|
| 1. Intake filter housing            | 15. Oil and water separator (high pressure)                              |
| 2. Valve Head 1st Stage             | 15.A. Oil and water separator (low pressure)                             |
| 3. Valve Head 2nd Stage             | 16. Oil and water separator drain tap, high pressure                     |
| 4. Valve Head 3rd Stage             | 16.A. Oil and water separator drain tap, low pressure                    |
| 5. Interstage cooler I – 2nd stage  | 17. Purifier housing   |
| 6. Interstage cooler II – 3rd stage | 17.A. Purifier housing cap   |
| 7. After cooler                     | 18. Filter housing drain tap   |
| 8. Safety valve 1st stage           | 19. Pressure maintaining valve (1800 psi)                                |
| 9. Safety valve 2nd stage           | 20. Purified air outlets (2)   |
| 10. Crankcase casting               | 21. Final safety relief valve (factory preset to customer requirement)   |
| 11. Front bearing cover             | 22. Check valve—INSIDE upper separator                                   |
| 12. Fan wheel                       | 23. Oil fill vent cap screw  |
| 13. Oil filler cap                  | 24. Oil level indicator, behind filter housing (not shown) See figure 1. |
| 14. Oil drain plug                  | 25. Final pressure gauge bar/psi   |

**NOTE: DO NOT RE-ADJUST SAFETY VALVES #8, 9 and 21, unless you are a licensed, qualified high pressure compressor mechanic (CALL THE FACTORY)!**

## **TECHNICAL DESCRIPTION**

Model:	SE 5K/6k (9.0cfm)
Weight:	480 lbs (125kg) w/ 7.5 HP motor
Dimensions:	44"L x 28"W x 35"H
Construction:	Air cooled, three stage, three cylinder high pressure compressor, all stainless steel interstage cooling
Max. pressure:	340 bar (5000 psig)
Approx. output:	MAX-AIR 90 (265 L/min.) (9.0 cfm)
Interstage pressure:	1 stage 7 bar (100 psig) with interstage safety 2 stage 40-46 bar (570-655 psig)
Safety valves:	On all stages. 3 stage 225 - 340 bar (3200/5000 psig)
Bearings:	Entire crankshaft assembly on roller bearings
Lubrication:	Splash lubrication with oil thrower pin
Oil content:	1.9 Liter/64 Fl. oz. Compact/Cabinet models
Oil type:	MAXLUBE #501 synthetic oil
Oil viscosity:	Summer: Above +10°C (50°F) SAE20W/40 Winter: From +10°C to -15°C (50° to 5°F) SAE 10W Below -15°C (5°F) SAE 5W
Permissible inclination:	5° of compressor at maximum oil level
Drive motors:	7.5 HP single/three phase electric motor
Warranty:	One year from purchase date
Standard equipment:	Intake filter, cartridge filter, high pressure hoses, pressure gauge, (2) SCUBA cylinder filling attachments, pressure relief valves, synthetic compressor oil, spare parts list and owners manual.

## **2.2 Working System**

Ambient air, which must be free from exhaust fumes, is drawn through the intake filter and inlet valve into the 1st stage cylinder, where it is pre-compressed.

A portion of the compression heat is dissipated through the valve head, piston, cylinder, crankcase and lubricating oil to the cooling airflow. The larger portion remains in the compressed air and cooled down in the following intercooler to a few degrees above ambient temperature. The air is then passed on to the next stages, where it is compressed in the same way. The after cooler cools the air to 10° C above ambient temperature at the maximum.

Operating temperatures are:

inlet nipples of suction valves approximately 15° - 20° C above ambient temperature (hand warm);  
outlet nipples of pressure valves and valve heads approximately 90° - 105° C.

Each stage incorporates an independent preset safety relief valve.

The intake air always contains a certain amount of humidity depending on the weather. During compression and the consequent cooling down, this humidity largely condensates and forms the condensate together with small particles of lubricating oil. This condensate is a milky fluid and precipitates in the separators.

## **2.3 Technical details of the compressor Block**

### **2.3.1 Crankcase, crankshaft, piston, cylinder**

The crankcase is made of light alloy; the bearing cover is sealed by means of an O-ring. The crankshaft, connecting rods and piston pins all incorporate roller bearings and grooved ball bearings. The connecting rods are mounted on the single throw of the crankshaft.

The pistons of the 1st and 2nd stage are made of light alloy and incorporate piston rings.

The 3rd stage piston is a free-floating piston with piston rings. The free-floating piston is driven by a guide piston, the lateral surface of which is flattened to improve the lubrication of the free piston. The cylinders are made of cast iron.

### **2.3.2 Valve heads, valves, intercoolers, separators, filters**

The valves are screwed into the well-ribbed valve heads. Valves are arranged side by side and can be removed by a valve key.

Maintenance of the pressure valves can be carried out from outside, the suction valves can only be removed after removal of the valve heads. Torque for tightening the valve head screws of the 3rd stage: start with 1 kpm (7ft.-lb), finish with 2,2 kpm (16 ft.-lb) ensure yourself that piston is down into the cylinder.

## **DANGER**

### **2.3.3 Safety valves**

The safety valves prevent damage to the compressor by overpressure and are factory set at the following pressures:

1st stage: 113 psi (8 bar)      2nd stage: 725 psi (50 bar)      3rd stage: 10% above filling pressure

In case a safety valve blows, do not adjust to a higher pressure but check for the cause. Refer to section 5.

**Adjustment of the safety valves, by non-authorized persons, may result in the loss of the warranty and may result in serious injury or death.**

### **2.3.4 Cooling, lubrication**

The 1st and 2nd stage intercoolers and the after cooler consist of steel pipes and are smooth. The splash lubrication operates with oil thrower pins. The high-pressure stage is lubricated by oil vapors.

### **2.3.5 Pressure holding valve**

This valve is mounted after the purification filter.

Working Procedure

This valve will only open when the internal pressure of the compressor has reached 1800PSI  $\pm$  10% PSI (80  $\pm$  10% bar) to permit a constant and optimum separation.

## **2.4 Base Frame, Protective Frame, Covers**

Depending on the specifications of the buyer, the compressor rests on a base frame consisting of welded section steel with an additional frame bracket for the mounting of electric motors or it is further equipped with an allover protecting frame. This frame is also made of section steel and its entire surface is painted to make it weather and corrosion-resistant.

The flywheel of the compressor, in the basic version, is covered by a steel cover or a grid, both being designed with a view to safety and optimum air guidance.

The front panel incorporates 2 filling valves, final stage pressure gauges and the side panel incorporates the condensate drain manifold for the manual draining of the filters (special frame version mod. compact).

## **WARNING**

## **3. Safety Precautions for The Filling of Cylinders**

### **3.1 General Precautions for the filling of cylinders**

Take care that the intake air is pure and free from noxious gases and exhaust fumes.



Make use of the intake hose and secure it in such a way as to ensure that no engine exhaust fumes are taken in.

Filling hoses must be in perfect condition, connecting threads faultless. Particular attention should be paid to damage of the connecting fittings. If the rubber is scored, the hose must not be used any longer because water can enter and attack the wire gauze. In that case it is not guaranteed that the hose is able to hold the pressure.

Do not open disconnected filling valves when under pressure since the highly compressed air can cause serious injury or death.

Check air tightness of the complete unit regularly by brushing all fittings and couplings with soap solution and repair all leaks. **(DO NOT USE YOUR HAND/FINGERS TO DETECT LEAKS)**

All work on the compressor unit must be carried out with the compressor shut down and depressurized.

On a compressor with an electric motor, disconnect at the power source prior to any work.

Never weld high-pressure tubing.

Never empty air-cylinders completely. The closed cylinder should always contain some residual pressure in order to avoid the entrance of humid ambient air.

## **WARNING**

### **4. Installation, Operation, Maintenance, Service**

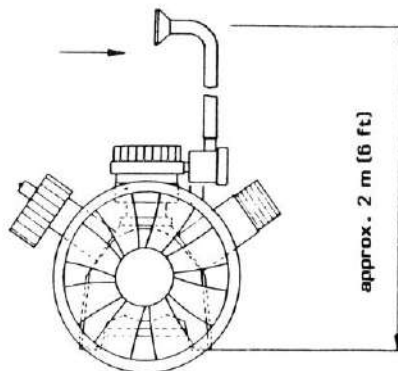
#### **4.1 Installation**

**Make sure there is good ventilation.**

Install the unit on a level ground (maximum permissible sloping 5°), clearance of minimum 2 ft (24") completely around the compressor to ensure proper ventilation.

In order to prevent health hazards the intake air must be free from exhaust fumes. This can be effected by stretching the intake snorkel to its full length, considering the direction of the wind and securing it approximately 2 m above level ground. Check that the hose is not bent or broken (Table 3).

**Do not operate the unit in closed or partly closed rooms, whatever size. This applies to all units with gas or diesel engines.**



**Table 3: Location of the intake hose**

## 4.2 Starting-up

Before starting engine check oil level in the crankcase of the horizontally placed compressor ( § 4.8.1)  
Use MAXLUBE #501 synthetic oil.

### ***Starting of the engine:***

Before starting electric motors, check voltage. Electric connections must comply with the respective regulations. Verify fan direction. Compare motor with mains and frequency. Fuse motor correctly.

Check direction of rotation. The use of a motor starting contactor is recommended. If using a gasoline engine driven compressor, check oil level in motor and compressor (§ 4.8.1)

Before starting the engine, open condensate drain valve so that engine starts without load. Pull the choke (half open). As soon as the motor has been started, switch to full power, then close condensate drain so that pressure is built up in the individual stages.

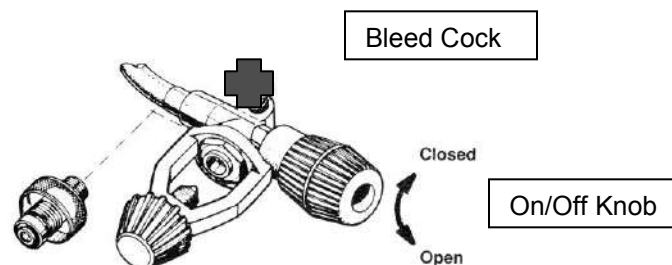
## **WARNING**

## 4.3 Filling procedure

Use only cylinders that are within hydro test date and pressure rated to the fill pressure preset on your compressor. The preset pressure relief (blow-off) on the final stage is usually 10% above the cylinder rated pressure.

Example: if you are filling a 3000 psi rated cylinder you should close the fill valve or shut off the compressor at 3000 psi (NOT ABOVE IT). The 10% additional pressure, preset on the relief valve, is just an added safety in case you can not shut off in time. Letting the relief valve blow-off often will damage it, as it is designed to blow-off for emergency only.

To check the pressure blow-off of your final relief valve, close the fill valve and bleed, let the compressor build up pressure. When safety valve blows-off read the pressure at the final pressure gauge and make a note of it for the future. After you are satisfied that the setting is correct for your fill pressure fully open filling valve first, then open cylinders valve – monitor fill pressure during filling operation. After reaching the desired pressure, always close cylinder valve first, then close the fill valve. To remove fill valve from cylinder you must bleed the residual pressure by opening the bleed cock on the fill valve.



**Operation of filling valve**

#### **4.4 Shutdown procedure**

On compressors using gasoline drive, close hand lever on carburetor and turn "On/Off" switch off. Close fuel cylinder valve and drain condensate out of compressor. In addition, check oil level of compressor, gasoline level in engine tank and carry out current service (§ 4.8).

#### **4.5 Preparation for extended storage**

Prior to extended storage, the compressor should run a few minutes against a small backpressure of approximately 300PSI (20 bar), by partly closing filling valve in order to prevent possibility of corrosion. Open condensate drain valve again, then close them to prevent loss during transportation.

#### **4.6 Preservation of compressor**

Remove intake air filter cartridge. Start compressor and slowly fill 10 to 20 cm<sup>3</sup> of MAXLUBE #501 synthetic oil into intake piece of compressor. Keep filling valve open and condensate drain valve closed. Operate unit for approximately 1 minute. Close filling valves and open condensate drain valves. Decompress all stages and then close all valves.

In cases of prolonged storage periods, run unit every 3 months. Lubricating oil loses its efficiency during prolonged idle periods in the compressor and motor. This requires draining and replacing with fresh oil at least once a year.

#### **4.7 Maintenance and air tightness test**

Besides the standard stipulated service works (§ 4.8) we recommend you clean the compressor at regular intervals to notice any oil leakage and impairment to the efficiency of the cooling system resulting from dirt on cooler coils and fins. Test air tightness by regularly brushing all fittings, valves and tubing of the condensate drain with soap-water or with leak test spray. Air leaks considerably impair the output of the compressor.

#### **4.8 Service, service timetable**

##### ***4.8.1 Oil level check, change of oil***

Check oil level daily before putting the unit into operation. Oil level must be between minimum and maximum of transparent tube on the crankcase, behind the filter or on the front, oil level sight glass for cabinet models. Oil level must not be too high because excessive oil can result in over-lubrication and choking of the valves. When oil level is too low, oil thrower pins do not any longer dip into oil, lubrication stops and the unit is destroyed.

**Oil change:** first oil change after 15 operating hours, further oil changes every 50 operating hours. If the operating hours indicated above are not reached within 5 months, oil must be changed after the season or before storing for the winter. Do not use oils of different brands at the same time: do not use openly stored oil, but only from original oilcans.

## **WARNING**

### **4.8.2 Safety valve control**

The final safety valve protects the 3rd stage and the high-pressure cylinders and is factory set to 10% above the requested filling pressure. The safety valve of the 3rd stage must be checked for proper functioning periodically. Pump unit to final pressure, with filling valve closed, until safety valve releases. Blow-off pressure of the safety valve to be checked on pressure gauge, then open filling valve.

### **4.8.3 V-belt adjustment**

Check V-belts after the first 10 and after further 30 and 120 operating hours. Maximum yield at center of V-belt should not exceed 10 mm when subject to a pressure of 5 kg.

### **4.8.4 Intake filter**

Check every 25 operating hours. The 5 micron filter cartridge (air intake cartridge) must be changed after having it turned 3 times by 90°.

**Cleaning:** only wipe out with damp cloth. DO NOT blow air inside filter case. Check O-ring in the filter case and make sure that the holding spring, on top, is installed properly. Only use original cartridges.

### **4.8.5 Condensate drain system**

Condensate = water/oil vapors = emulsion

The color of this emulsion should be milky-white; traces of brown discoloration are acceptable. If the emulsion suddenly turns dark brown and smells, stop the unit and check oil level. If oil level is okay, check for adequate, cool air circulation around the unit.

## **CAUTION**

***Drain off the condensate every 8-10 minutes for manual drain units.***

***For automatic drain units with preset drain timing, make sure the automatic condensate drain is working and drain time, frequency and duration is adequate for your climate.***

## **CAUTION**

### **4.8.6 Purifier cartridge, replacement intervals**

The cartridge must be changed before air starts to reek of oil. The quality of breathing air depends to a large extent on the condition of the cartridge. For this reason, it is important to keep strictly to the replacement intervals of 12 operating hours for the average size cylinder. The replacement intervals will vary depending on the climate you are operating in (i.e., rain, excessive moisture and humidity).

This purifier cartridge LF-1002 is rated for 10,000 cft @ 72°F air intake temperature, draining the condensate often, derate by 10% for every 5°F above 72°F. The reverse applies for temperatures below 72°F.

**Important for filter maintenance:** Service only when unit is turned off and totally depressurized. Check filter case, threads and O-rings and maintain or replace if necessary. It is recommended to record the quantity of pressure cylinders filled in order to reassure that the precise replacement intervals are kept. Leave the cartridge in the filter during idle periods. Leave unit at approximately 1000 – 600 psi//75 - 40 bar to prevent ambient humidity from penetrating into the compressor pipe system.

#### ***4.8.7 Suction and pressure valves***

Valves should be taken out and cleaned after 1,000 operating hours. The seats must be carefully treated to prevent even the slightest damage. Use only gasoline, soft brushes of copper or nylon. Do not use steel brushes, screwdrivers, etc. Should you detect even the smallest damage (ruptures, worn, seats, etc.), replace the entire part. In order to service the valves, the valve heads must be removed.

#### ***4.8.8 Drive motors***

Upon request: gasoline motor - 4 stroke; Diesel motor; Electric motor 7,5 HP.

For further details, see data sheet of manufacturer.

#### ***4.8.9 Mounting of cooler and belt guard***

After approximately 50 operating hours, check fixation of cooler and retighten. Check distance between rotating parts and guard so that smooth operating is guaranteed even after lengthening of the v-belt.

#### **Maintenance schedule:**

Prior to every cylinder filling:

- drain condensate (§4.8.5)
- check safety valve (§4.8.2)
- filling procedures (§4.3)
- check oil level daily (§4.8.1)
- purification cartridge replacement intervals (§4.8.6)



## Maintenance after operating hours:

<u>Hours</u>	<u>Recommended Service</u>
1/2	Check valve heads. Intake piping must be hand warm; outlet piping must be hot (§2.2)
15	First oil change (§4.8.1) check tension of v-belt (§4.8.3)
25	Maintenance of intake filter (§4.8.4)
30	Check tension of v-belts (§4.8.3)
50	Check fixation of cooler and belt guard (§4.8.9) Oil change (§4.8.1)
120	Check tension of v-belt (§4.8.3)
1000	Check suction and pressure valves (§4.8.7)
2000	Replace all suction and pressure valves
3000	Replace piston ring, check suction and pressure valve and 3 <sup>rd</sup> stage piston and sleeve

### 4.9 Start-up procedure and workshop instruction

Gaskets and O-rings can be replaced and serviced by the user themselves, if he or she, has sufficient experience to do so. Repairs on the crankcase and bearings shall only be carried out by an authorized workshop. Safety valves must be replaced as complete parts.

#### 4.9.1 Cylinders

When removing and replacing cylinders verify that when the piston is in the top position, it must be on the same level with the cylinder top edge. Correct differences with gaskets under the cylinder.

#### 4.9.2 Piston

The 1st and 2nd stage pistons are equipped with piston rings. In the 3rd stage the piston is floating and runs with piston rings in a piston case (3<sup>rd</sup> stage rings not sold separately). In repairs or reassembly, take care that the piston rings are replaced in the correct sequence.

#### 4.9.3 Piston ring gap

Should piston rings exhibit excessive wear and high oil consumption, check piston ring gap.

Test procedure: Insert piston ring into respective cylinder. The upper rim should be approximately 10 mm from upper edge of cylinder. Check gap with feeler gauge.

#### Permissible, maximum piston ring gaps.

<u>Stage</u>	<u>Max-Air 55</u>	<u>Max-Air 90</u>	
1st stage	Ø88 mm	Ø95 mm	s= 0,6 mm
2nd stage	Ø36 mm	Ø38 mm	s= 0,36 mm

If gap is not as above, replace the piston rings and cylinder.

#### ***4.9.4 Tightening torque***

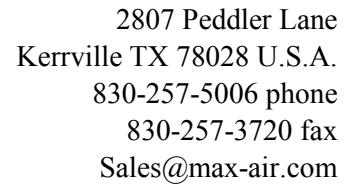
<b><u>screw</u></b>	<b><u>thread</u></b>	<b><u>max. torques</u></b>
hex. screw inner hex. Screw	M 6	1,0 kpm / 7 ft-lbs
hex screw inner hex. Screw	M 8	2,5 kpm / 18 ft-lbs
hex. screw inner hex. screw	M 10	4,5 kpm / 32 ft-lbs

Valve head screw requires torque wrench tightening

## 5. Trouble Shooting

Trouble	Cause	Remedy
Gas engine does not start		See operating manual
Electric motor does not start	One phase failed	Check fuses
Safety valve I blows off	2nd stage valves defective	Clean valves or replace
Safety valve II blows off	3rd stage valves defective	Replace
Safety valve III blows off	Maximum operating pressure exceeded	Stop compressor, disconnect cylinder
Final safety valve blows off below 210 bar	Safety valve not well adjusted	Replace safety valve
Safety valve 1st or 2nd stage blows off below normal intermediate pressures	Safety valve defective	Replace safety valve
Engine speed and output decrease	Engine power insufficient v-belt slipping	Adjust v-belt
Output decreases although engine speed is correct	Valves blocked or leaking Damaged piston of 3rd stage Blocked cooling tubes or gaskets leaking	Clean or replace Replace Tighten or replace Check; brush with soap, replace
	Intake filter blocked Intake hose bent Worn pistons or rings	Replace Readjust Replace
Oil taste in delivered air	Activated carbon filter saturated	Replace
Compressor gets too hot	Wrong direction of rotation Dirt on outside of cooler Dirty valve(s) not closing properly (causing over-charge of another stage) V-belt torn (loose)	See arrow on compressor Clean Clean or replace Replace (tighten)

**Strict observance of the operating instructions increases the life of the compressor and reduces down time.**



## Bill To:

Email \_\_\_\_\_

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Quantity	Item	Units	Description	Unit Price	Total
	LF-1002	Each	Purification filter for Max-Air 90	61.00	
	LF-306714	Each	Dryer cartridge for Max-Air 90	49.00	
	IF-90	Each	Inlet filter for the Max-Air 90	12.50	
	MI-4001R	Each	Moisture level indicator element	8.00	
	MI-4000-K	Each	CO/Moisture level indicator kit	14.00	
	IH-6000	Each	6' intake hose with fittings (no canister)	40.00	
	MaxLube 501-1	Gal	Synthetic compressor oil	59.50	
	MaxLube 501-C	Case	Synthetic compressor oil (6 each (1) gal containers)	322.00	
				SUB-TOTAL	
				*TAX 8.25%	
				<b>TOTAL</b>	

All prices are subject to change without notice and are quoted FOB our plant in Kerrville, Texas.

All orders are shipped via UPS, unless otherwise indicated.

All orders are shipped via UPS, unless otherwise indicated. Shipping charges are based on weight and service selected.

\* Sales tax is only applicable to Texas ship to addresses



**Max-Air®**  
HIGH PRESSURE BREATHING AIR COMPRESSORS

[www.max-air.com](http://www.max-air.com)

# **MAX-AIR**

## **55/90/180 Series & Tropic-Max**

**High Pressure Compressor For Breathing Air**

**Compressor Pumping Group**

## **Parts Manual**

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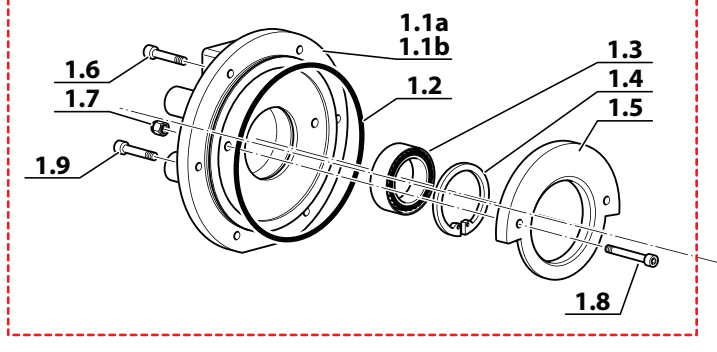
## CRANKCASE

Pos.	Qty	Code	Description
<b>KIT1a</b>	<b>1</b>	<b>13-00-0050/R</b>	<b>FILTER SIDE FLANGE MCH13/16 KIT</b>
1.1a	1	13-00-0050	FILTER SIDE FLANGE MCH13/16
1.2	1	13-00-0062	FLANGE O-RING 2562
1.3	1	13-00-0042	FLANGE ROLLER BEARING NU305
1.4	1	13-00-0055	SEEGER RETAINING RING J 62
1.5	1	13-01-0042/N	HALF MOON FLANGE
1.6	6	13-00-0048	SCREW ZINC. DIN 912
1.7	2	13-00-0137	SELF LOCKING NUT
1.8	2	13-00-0067	SCREW ZINC. DIN 912
<b>KIT1b</b>	<b>1</b>	<b>13-00-0050/TR/R</b>	<b>FILTER SIDE FLANGE MCH13/16 FOR TROPICAL KIT</b>
1.1b	1	13-00-0050/TR	FILTER SIDE FLANGE MCH13/16 FOR TROPICAL
1.2	1	13-00-0062	FLANGE O-RING 2562
1.3	1	13-00-0042	FLANGE ROLLER BEARING NU305
1.4	1	13-00-0055	SEEGER RETAINING RING J 62
1.5	1	13-01-0042/N	HALF MOON FLANGE
1.6	4	13-00-0048	SCREW DIN 912
1.7	2	13-00-0137	SELF LOCKING NUT
1.8	2	13-00-0067	SCREW ZINC. DIN 912
1.9	2	13-00-0075	SCREW ZINC
<b>KIT2a</b>	<b>1</b>	<b>13-00-0026/R</b>	<b>KIT CRANKCASE MCH13-16 SIGHT GLASS</b>
<b>KIT2b</b>	<b>1</b>	<b>13-00-0001/R</b>	<b>CRANKCASE MCH13-16</b>
<b>KIT2c</b>	<b>1</b>	<b>05-00-001/1/R</b>	<b>KIT CRANKCASE MCH5 CNG SIGHT GLASS</b>
<b>KIT2d</b>	<b>1</b>	<b>05-00-002/R</b>	<b>KIT CRANKCASE MCH5 CNG</b>
2.1a	1	13-00-0026	CRANKCASE MCH13-16 SIGHT GLASS
2.1b	1	13-00-0001	CRANKCASE MCH13-16
2.1c	1	05-00-001/1	CRANKCASE MCH5 CNG SIGHT GLASS
2.1d	1	05-00-002	CRANKCASE MCH-5 CNG
2.2	1	6-00-029	OIL PURGE CAP MCH6
2.3	1	13-00-0174	STRAIGHT 1/8 PIPE FITTING
2.4	4	13-01-0008	FIRST STAGE TIE ROD MCH13/16
2.5	8	13-02-0040	2ND/3RD STAGE TIE ROD
<b>KIT3a</b>	<b>1</b>	<b>13-00-0071/R</b>	<b>FAN SIDE FLANGE MCH13-16 KIT</b>
<b>KIT3b</b>	<b>1</b>	<b>13-00-0071/TR/R</b>	<b>FAN SIDE FLANGE MCH13-16 TROPICAL PLUS KIT</b>
3.1a	1	13-00-0071	FAN SIDE FLANGE MCH13-16
3.1b	1	13-00-0071/TR	FAN SIDE FLANGE MCH13-16 TROPICAL
3.2	1	13-00-0070/N	ROLLER BEARING NUP 206 C3
3.3	1	13-00-0062	FLANGE O-RING 2562
3.4	1	13-00-0055	SEEGER RETAINING RING J 62
3.5	4	13-00-0048	SCREW ZINC. DIN 912
3.6	1	13-00-0073	OIL SPLASH GUARD
3.7	2	13-00-0075	SCREW ZINC
4	1	13-00-0074	FAN-HOLDING HUB MCH13/16
5	1	13-00-0077	COOLING FAN WHEEL MCH13-16
6	1	13-00-0082	COOLING FAN FLANGE MCH13/16
7	1	VITE1045Z	SCREW ZINC.
8	4	13-00-0080	SCREW ZINC. DIN912
9	1	RON10ZG	WASHER
10	4	13-00-0079	WASHER

## CRANKCASE

**KIT 1a - 13-00-0050/R**

**KIT 1b - Tropical Plus - 13-00-0050/TR/R**

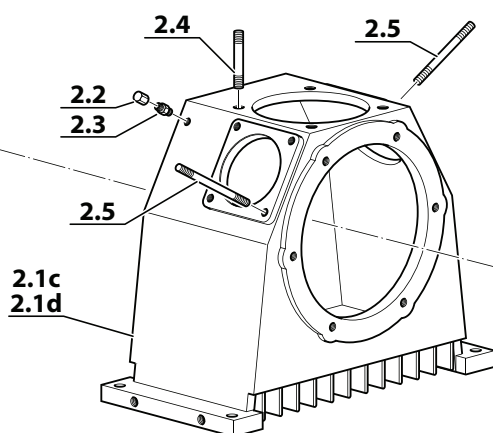


**KIT2c - 05-00-001/1/R** Standard-Tech-MiniTech

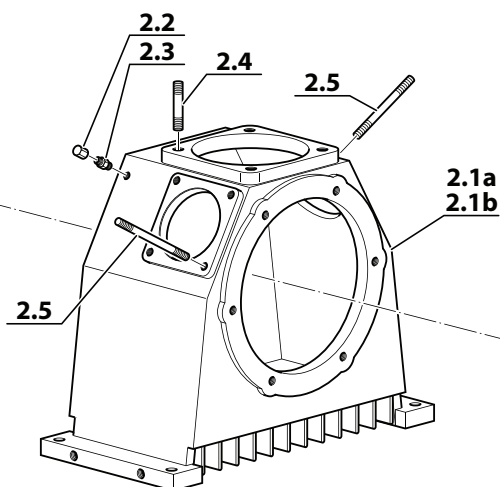
**KIT2d - 05-00-002/R** Compact-MiniSilent-SuperSilent-Mark

Standard-Tech-MiniTech **KIT2a - 13-00-0026/R**

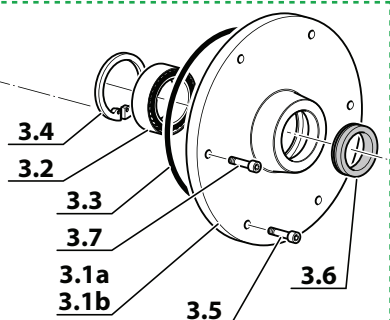
Compact-MiniSilent-SuperSilent-Mark **KIT2b - 13-00-0001/R**



**CRANKCASE MCH-8**

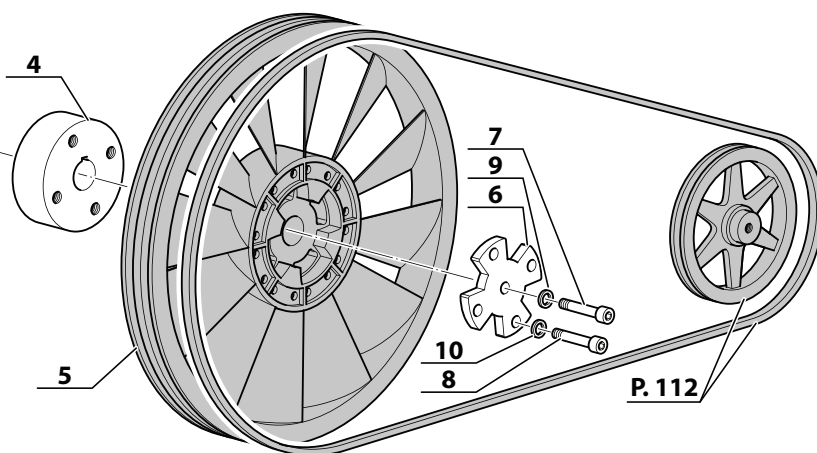


**CRANKCASE MCH-11-13-16**



**KIT 3a - 13-00-0071/R**

**KIT 3b Tropical Plus - 13-00-0071/TR/R**

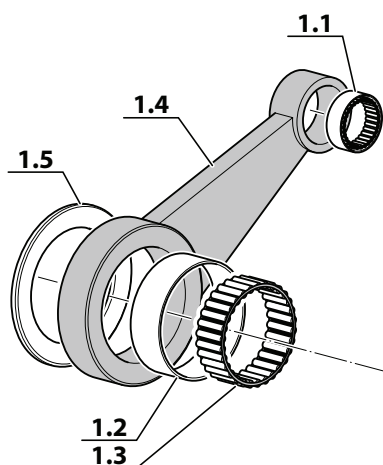


## CRANKSHAFT

Pos.	Qty	Code	Description
<b>KIT1</b>	<b>1</b>	<b>13-01-0107/R</b>	<b>1ST/3RD STAGE CON-ROD ASS.BLY KIT</b>
1.1	1	13-00-0192	BEARING ROLLER
1.2	1	13-00-0126	HARDENED RING
1.3	1	13-00-0128	BEARING ROLLER
1.4	1	13-01-0107	1ST/3RD STAGE CON-ROD ASS.BLY
1.5	1	13-00-0106	SPACER
<b>KIT2</b>	<b>1</b>	<b>13-00-0105/R</b>	<b>2ND STAGE CON-ROD ASS.BLY MCH13/16 KIT</b>
2.1	1	13-00-0192	BEARING ROLLER
2.2	1	13-00-0126	HARDENED RING IR 42X47X15,1
2.3	1	13-00-0128	BEARING ROLLER
2.4	1	13-00-0105	2ND STAGE CON-ROD ASS.BLY MCH13/16
2.5	1	13-00-0106	SPACER
<b>KIT3</b>	<b>1</b>	<b>13-00-0098/R</b>	<b>CRANKSHAFT MCH13/16 KIT</b>
3.1	1	13-00-0104	SCREW ZINC
3.2	1	13-00-0101	8MM SELF-LOCKING NUT
3.3	1	13-00-0100	COUNTERWEIGHT
3.4	3	13-00-0132	HARDENED RING
3.5	1	13-00-0098	CRANKSHAFT MCH13/16
3.6	1	13-00-0099	KEY
3.7	1	13-00-0072	SEEGER RETAINING RING
3.8	1	RON10ZG	WASHER
3.9	1	13-00-0081	SCREW ZINC.

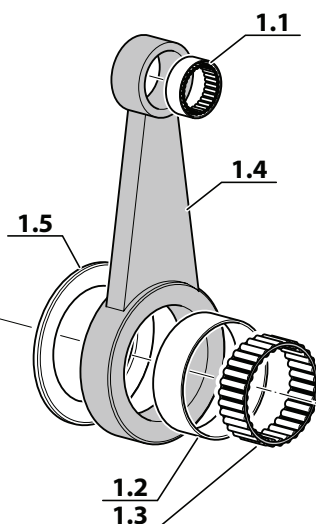
## CRANKSHAFT

**KIT 1**  
**13-01-0107/R**



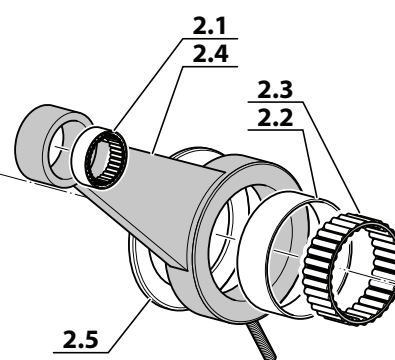
**3rd STAGE**

**KIT 1**  
**13-01-0107/R**



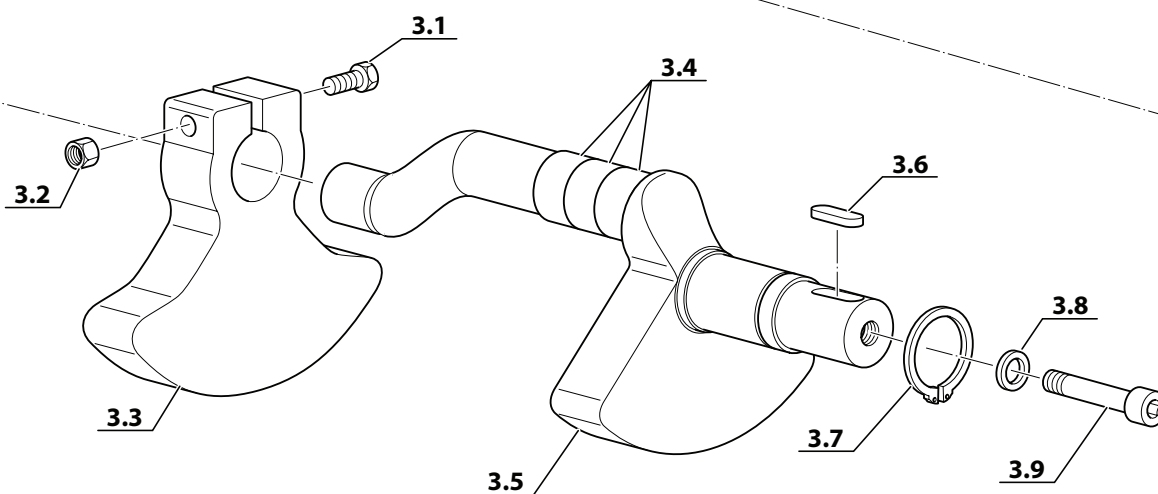
**1st STAGE**

**KIT 2**  
**13-00-0105/R**



**2nd STAGE**

**KIT 3**  
**13-00-0098/R**



## OIL LEVEL

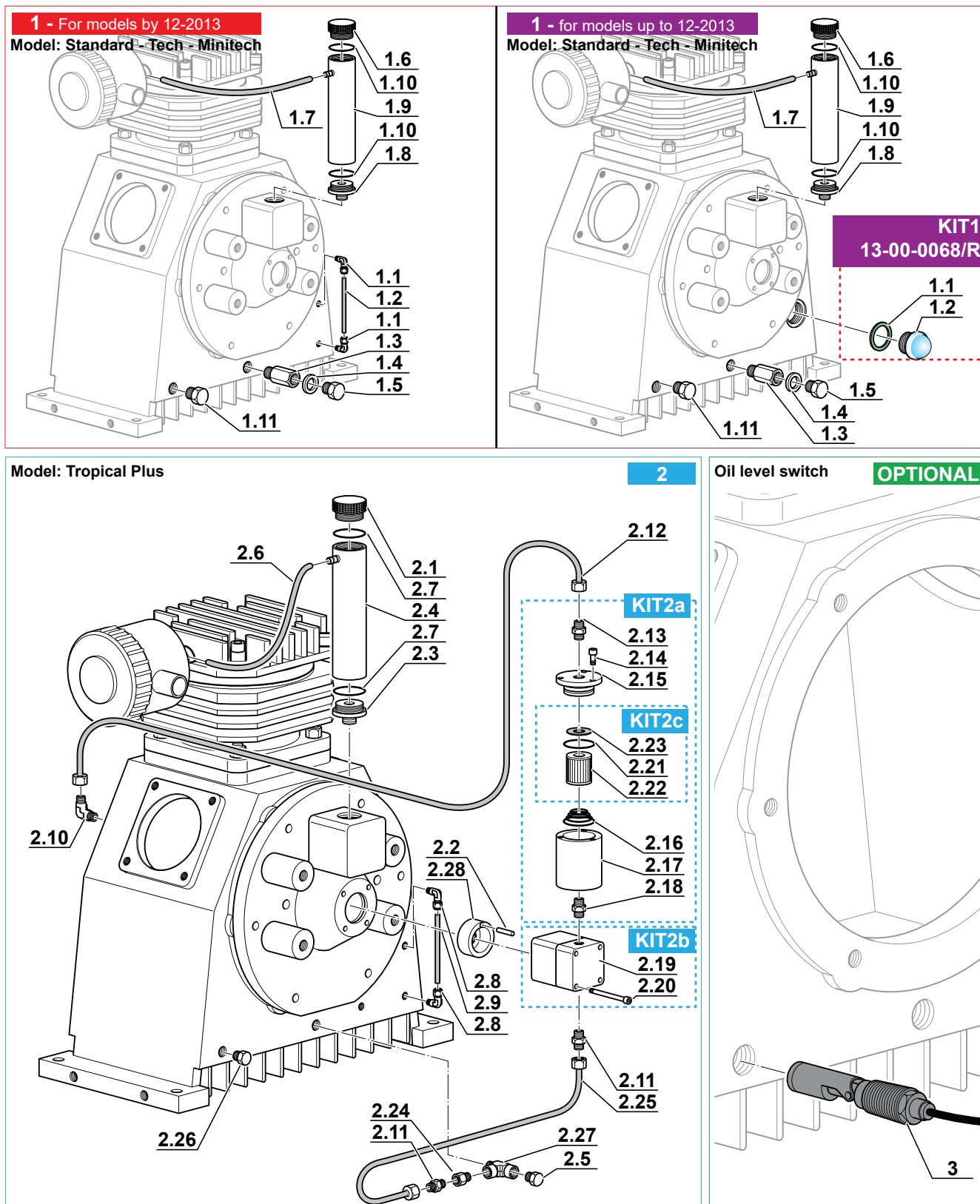
**Mod: Standard - Tech - Minitech - Tropical Plus**

Pos.	Qty	Code	Description
1.1	1	13-00-0021	FITTING 90°
1.2	1	13-00-0064	OIL LEVEL CHECK TUBE MCH13/16
1.3	1	13-00-0052	FITTING FOR OIL DISCHARGE
1.4	1	13-00-0053	COPPER GASKET
1.5	1	13-00-0063	OIL DRAIN PLUG
1.6	1	13-00-0090	OIL FILLING CAP 1/2 (RED) MCH13/16 WITH BREATHER
1.7	0,3	TUBRILSAN6X4	RILSAN HOSE 6X4
1.8	1	13-00-0065	LOWER OIL CHARGE TUBE FITTING MCH13/16
1.9	1	13-00-0076	OIL FILLING TUBE MCH13/16
1.10	2	13-01-0013	O-RING 3137 NBR70
1.11	1	13-00-0063/NPT	OIL ALERT 1/2-14 NPT - MCH-13/16 PLUG
<b>KIT1</b>	<b>1</b>	<b>13-00-0068/R</b>	<b>OIL LEVEL KIT</b>
1.1	1	13-00-0078	GASKET
1.2	1	13-00-0068	OIL LEVEL VIEWER
1.3	1	13-00-0052	FITTING FOR OIL DISCHARGE
1.4	1	13-00-0053	COPPER GASKET
1.5	1	13-00-0063	OIL DRAIN PLUG
1.6	1	13-00-0090	OIL FILLING CAP 1/2 (RED) MCH13/16 WITH BREATHER
1.7	0,3	TUBRILSAN6X4	RILSAN HOSE 6X4
1.8	1	13-00-0065	LOWER OIL CHARGE TUBE FITTING MCH13/16
1.9	1	13-00-0076	OIL FILLING TUBE MCH13/16
1.10	2	13-01-0013	O-RING 3137 NBR70
1.11	1	13-00-0063/NPT	OIL ALERT 1/2-14 NPT - MCH-13/16 PLUG
2.1	1	13-00-0090	OIL FILLING CAP 1/2 (RED) MCH13/16 WITH BREATHER
2.2	1	SPINA/3,5x26	PIN
2.3	1	13-00-0065	LOWER OIL CHARGE TUBE FITTING MCH13/16
2.4	1	13-00-0076	OIL FILLING TUBE MCH13/16
2.5	1	13-04-0231	OIL DRAIN PLUG 1/2"
2.6	0,3	TUBRILSAN6X4	RILSAN HOSE 6X4
2.7	2	13-01-0013	O-RING 3137 NBR70
2.8	1	13-00-0021	FITTING 90°
2.9	1	13-00-0064	OIL LEVEL CHECK TUBE MCH13/16
2.10	1	13-00-0144	FITTING 90°
2.11	1	13-00-0035	STRAIGHT FITTING 1/4 TUBE 8MM
2.12	1	13-03-0025/TR	SS TUBE 6X1 MCH-13-16 TROPICAL PLUS OIL DRAIN
<b>KIT2a</b>	<b>1</b>	<b>36-06-007/R</b>	<b>KIT OIL FILTER COVER</b>
2.13	1	13-00-0025E	FITTING 1/4 G -PIPE
2.14	1	VITE0512Z	SCREW ZINC
2.15	1	36-06-004	MCH-36 OIL FILTER PLUG
2.16	1	RE2ST/11	CONICAL SPRING
2.17	1	36-06-007	OIL FILTER CARTER
2.18	1	RACC25301/41/8	FITTING 2530 1/4 1/8
<b>KIT2b</b>	<b>1</b>	<b>36-06-009/R</b>	<b>KIT OIL PUMP</b>
2.19	1	36-06-009	OIL PUMP MCH36
2.20	4	36-06-010	MCH36 SCREW
<b>KIT2c</b>	<b>1</b>	<b>36-06-006/R</b>	<b>KIT OIL FILTER</b>
2.21	1	13-01-0013	O-RING 3137 NBR70
2.22	1	36-06-006	OIL FILTER
2.23	1	36-06-005	OIL FILTER GASKET IN NBR
2.24	1	RIDUZIONE/E2151004	M-F 1/2 1/4 REDUCTION
2.25	1	13-03-0024/TR	SS TUBE 8X1 DRAIN FITTING-OIL PUMP
2.26	1	13-00-0063/NPT	OIL ALERT 1/2-14 NPT - MCH-13/16 PLUG
2.27	1	RACC20701/2	T FITTING FXFXM 1/2
2.28	1	36-06-019/T	OIL PUMP COUPLING MCH13/16 TROPICAL
<b>3</b>	<b>1</b>	<b>SC000334</b>	<b>OIL LEVEL SWITCH</b>



## OIL LEVEL

Mod: Standard - Tech - Minitech - Tropical Plus



## OIL LEVEL

**Mod: Compact - Compact M - Compact Evo - MiniSilent - SuperSilent Evo - Tropical - Mark1 - MCH 26-32/ET Compact**

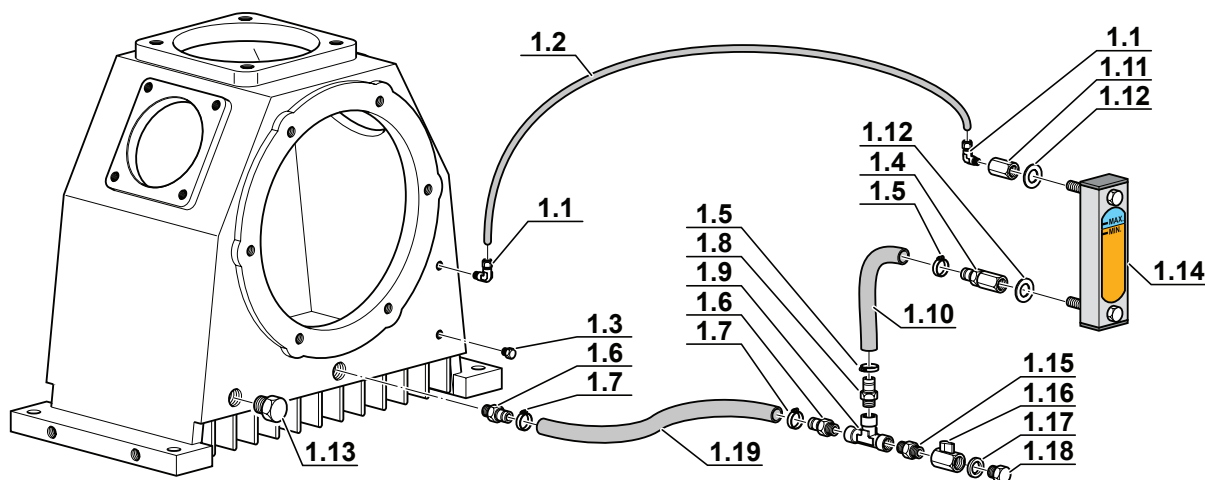
Pos.	Qty	Code	Description
1.1	2	13-00-0021	FITTING 90° 1/8 NPT
1.2	1	13-00-0064	OIL LEVEL CHECK TUBE MCH13/16
1.3	1	13-00-0139	PLUG
1.4	1	13-04-0333	LOWER OIL LEVEL FITTING
1.5	2	FASC/2/10/18	CLAMP
1.6	2	13-00-0052A	FITTING
1.7	4	FASC/3B/17/29	CLAMP
1.8	2	13-00-0063/N	1/2 CARRIER FITTING
1.9	1	13-04-0339	T FITTING
1.10	1	13-04-0335	OIL LEVEL TUBE
1.11	2	13-04-0218	OIL LEVEL UPPER FITTING
1.12	2	GUAR-LIV-OLIO	OIL LEVEL GASKET
1.13	2	13-00-0063/NPT	OIL ALERT 1/2-14 NPT - MCH-13/16 PLUG
1.14	1	13-04-0229	OIL LEVEL
1.15	1	RACC-2501-1/2	FITTING M-M 1/2"
1.16	1	13-04-0230	OIL DRAIN VALVE MCH13/16
1.17	1	13-00-0053	COPPER GASKET
1.18	1	13-04-0231	OIL DRAIN PLUG 1/2"
1.19	1	13-04-0342	OIL DRAIN TUBE MCH13/16 COMPACT
2.1	2	13-00-0021	FITTING 90° 1/8 NPT
2.2	1	13-00-0064	OIL LEVEL CHECK TUBE MCH13/16
2.3	1	13-00-0139	PLUG
2.4	2	RACC20031/2	T FITTING
2.5	1	13-00-0053	COPPER GASKET
2.6	2	13-00-0052A	FITTING
2.7	4	FASC/3B/17/29	CLAMP
2.8	1	13-04-0333	LOWER OIL LEVEL FITTING
2.9	1	13-04-0339	T FITTING
2.10	2	13-04-0338	REDUCTION
2.11	2	13-04-0218	OIL LEVEL UPPER FITTING
2.12	2	GUAR-LIV-OLIO	OIL LEVEL GASKET
2.13	2	13-00-0063/NPT	OIL ALERT 1/2-14 NPT - MCH-13/16 PLUG
2.14	1	13-04-0229	OIL LEVEL
2.15	1	TAPPO/OLIO/3/4	OIL PLUG
2.16	1	13-04-0230	OIL DRAIN VALVE MCH13/16
2.17	1	RACC/3/4-1/2	PLUG
2.18	1	13-04-0231	OIL DRAIN PLUG
2.19	1	13-04-0342	OIL DRAIN TUBE MCH13/16 COMPACT
2.20	1	13-04-0335	OIL LEVEL TUBE
2.21	1	13-00-0063/N	1/2 CARRIER FITTING
2.22a	1	T-SP-16X23-750	FOOD SPIRAL HOSE
2.22b	1	T-SP-16X23-1400	FOOD SPIRAL HOSE
2.23	2	FASC/2/10/18	CLAMP
2.24	2	RACC-2501-1/2	FITTING

## OIL LEVEL

Mod: Compact - Compact M - Compact Evo - MiniSilent - SuperSilent Evo - Tropical - Mark1 - MCH 26-32/ET Compact

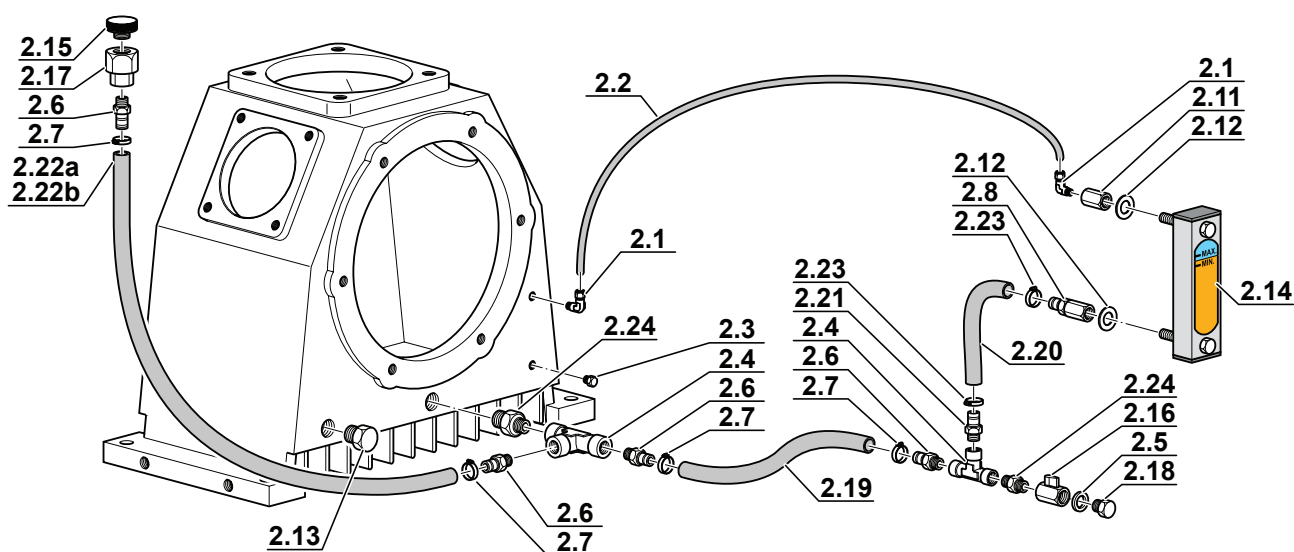
Model: Compact - Compact M - Compact Evo - MiniSilent - SuperSilent Evo - Tropical - Mark1

1



Model: MCH 26-32/ET Compact

2



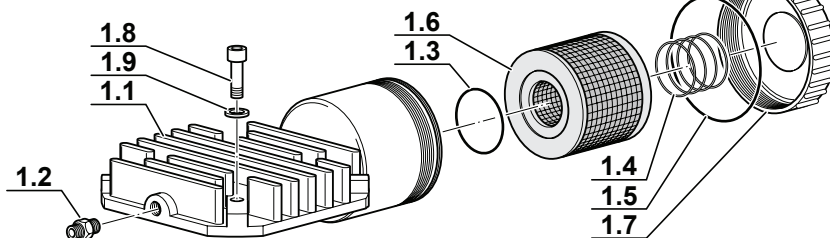
## 1<sup>st</sup> STAGE MCH-11-13-16-18

### For models up to 12-2014

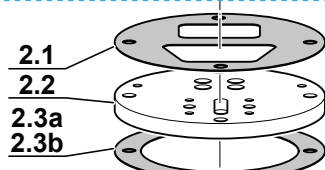
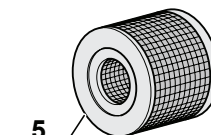
Pos.	Qty	Code	Description
<b>KIT1</b>	<b>1</b>	<b>13-01-0006/R</b>	<b>1ST STAGE HEAD COVER MCH13/16 KIT</b>
1.1	1	13-01-0006	1ST STAGE HEAD COVER MCH13/16
1.2	1	13-00-0012	STRAIGHT FITTING 1/4 TUBE
1.3	1	13-01-0013	O-R SUCTION FILTER 3137 NBR 70
1.4	1	13-01-0026	INTAKE FILTER SPRING
1.5	1	13-01-0011	INTAKE FILTER COVER O-RING MCH13/16
1.6	1	SC000370	SUCTION FILTER CARTRIDGE MCH13/16
1.7	1	13-01-0041	INTAKE FILTER COVER MCH13/16
1.8	4	13-00-0010	SCREW ZINC. DIN 912
1.9	4	RON/8	WASHER FLAT ZINC
<b>KIT2a</b>	<b>1</b>	<b>13-01-0003/R</b>	<b>1<sup>st</sup> STAGE CYLINDER HEAD 88MM KIT</b>
2.1	1	13-01-0005	1 <sup>st</sup> STAGE GASKET MCH/13 UPPER HEAD
2.2	1	13-01-0004	1ST STAGE REED VALVE
2.3a	1	13-01-0003	1ST STAGE 88MM. GASKET UNDER HEAD
<b>KIT2b</b>	<b>1</b>	<b>16-01-0003/R</b>	<b>1<sup>st</sup> STAGE CYLINDER HEAD 97MM KIT</b>
2.1	1	13-01-0005	1 <sup>st</sup> STAGE GASKET MCH/13 UPPER HEAD
2.2	1	13-01-0004	1ST STAGE REED VALVE
2.3b	1	16-01-0003	GASKET FIRST STAGE D. 97MM MCH16 UNDER HEAD
<b>KIT3a</b>	<b>1</b>	<b>13-01-0117/R</b>	<b>1ST STAGE MCH13 KIT</b>
3.1a	1	13-01-0117	1ST STAGE 88MM. PISTON MCH13
3.2a	4	13-01-0118	PISTON RINGS D. 88MM 1ST STAGE MCH13
3.3a	1	13-01-0116	FIRST STAGE 88MM PIN
3.4	2	13-00-0110	SEEGER RETAINING RING
<b>KIT3b</b>	<b>1</b>	<b>16-01-0117/R</b>	<b>1ST STAGE MCH16 KIT</b>
3.1b	1	16-01-0117	1ST STAGE PISTON D.95MM MCH16
3.2b	4	16-01-0118	PISTON RINGS DIA 95MM FIRST STAGE MCH16
3.3b	1	16-01-0116	FIRST STAGE 95MM PIN
3.4	2	13-00-0110	SEEGER RETAINING RING
<b>KIT4a</b>	<b>1</b>	<b>13-01-0002/R</b>	<b>1ST STAGE CYLINDER 88MM. MCH13 KIT</b>
4.1a	1	13-01-0002	1ST STAGE CYLINDER 88MM. MCH13
4.2	1	13-01-0007	O-RING 2400 NBR 70
4.3	4	13-00-0010	SCREW ZINC. DIN 912
4.4	4	RON/8	WASHER FLAT ZINC
4.5	4	13-00-0018	MIDDLE NUT ZINC
4.6	4	13-01-0008	FIRST STAGE TIE ROD MCH13/16
<b>KIT4b</b>	<b>1</b>	<b>16-01-0002/R</b>	<b>1ST STAGE CYLINDER D.95MM MCH16 KIT</b>
4.1b	1	16-01-0002	1ST STAGE CYLINDER D.95MM MCH16
4.2	1	13-01-0007	O-RING 2400 NBR 70
4.3	4	13-00-0010	SCREW ZINC. DIN 912
4.4	4	RON/8	WASHER FLAT ZINC
4.5	4	13-00-0018	MIDDLE NUT ZINC.
4.6	4	13-01-0008	FIRST STAGE TIE ROD MCH13/16
5	1	SC000370	SUCTION FILTER CARTRIDGE MCH13/16

# **1<sup>st</sup> STAGE MCH-11-13-16-18** **For models up to 12-2014**

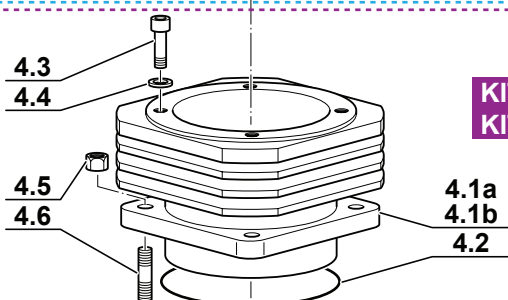
## **KIT 1 - 13-01-0006/R**



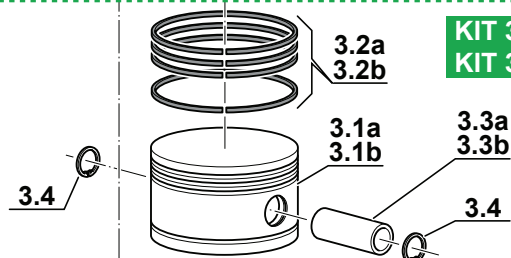
## **SUCTION FILTER CARTRIDGE**



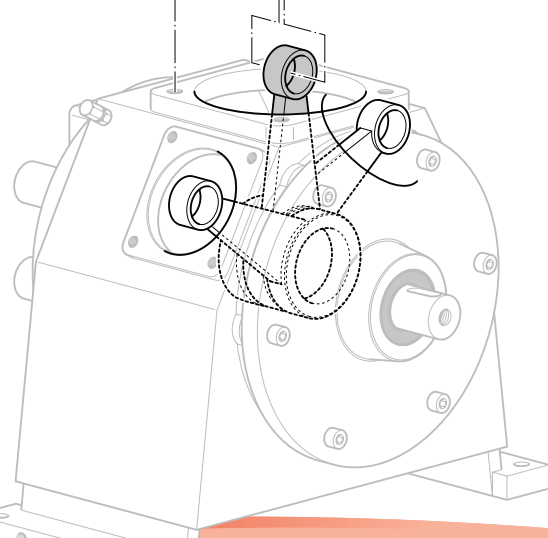
## **KIT 2a MCH-11-13 - 13-01-0003/R** **KIT 2b MCH-16-18 - 16-01-0003/R**



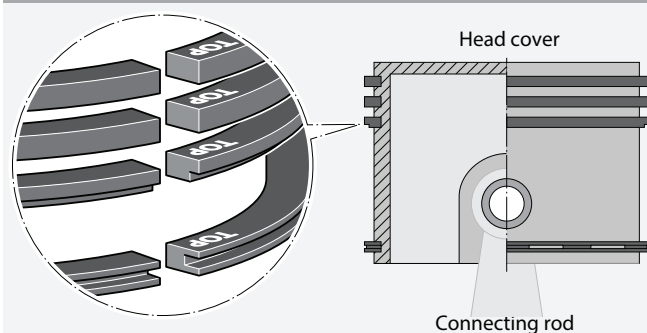
## **KIT 4a MCH-11-13 - 13-01-0002/R** **KIT 4b MCH-16-18 - 16-01-0002/R**



## **KIT 3a MCH-11-13 - 13-01-0117/R** **KIT 3b MCH-16-18 - 16-01-0117/R**



## **Direction of assembly of segments**



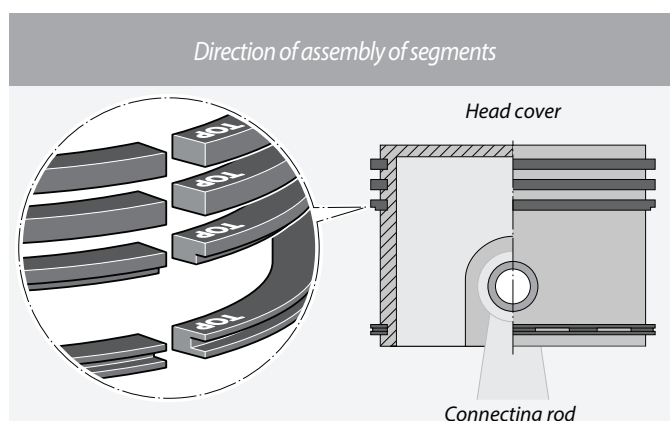
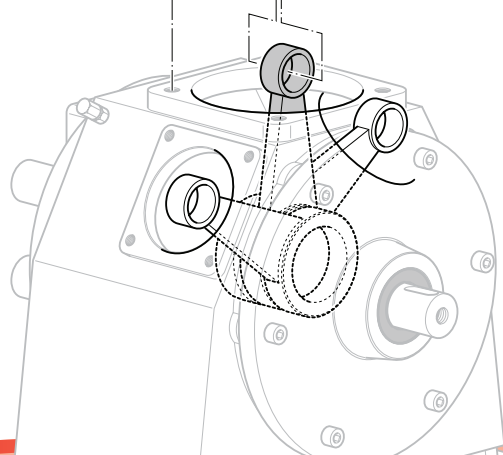
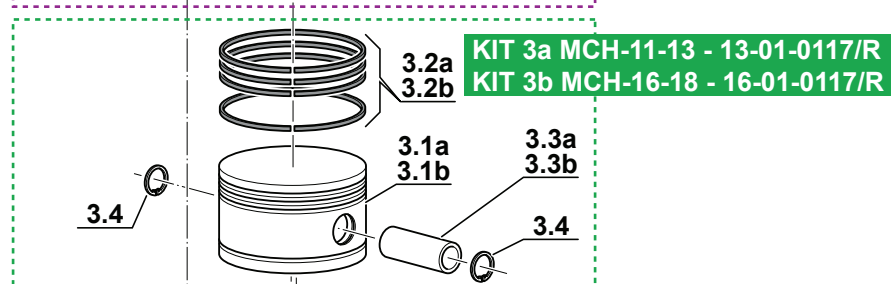
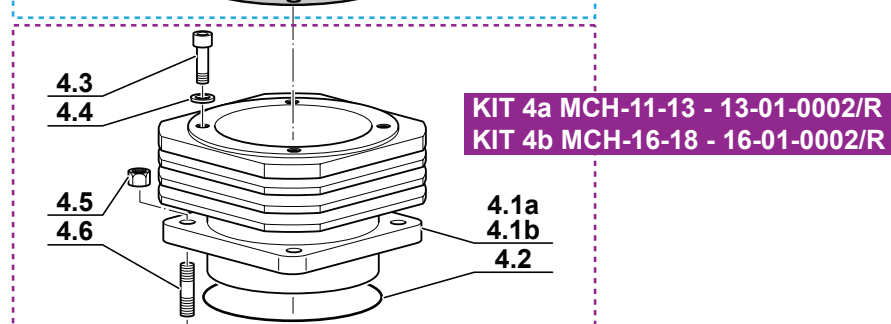
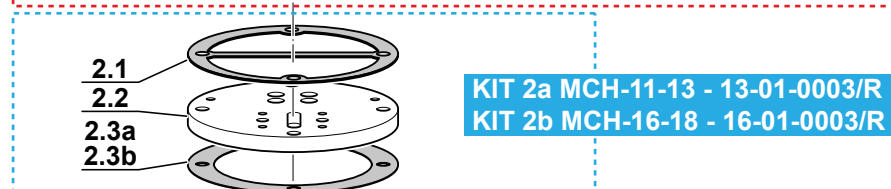
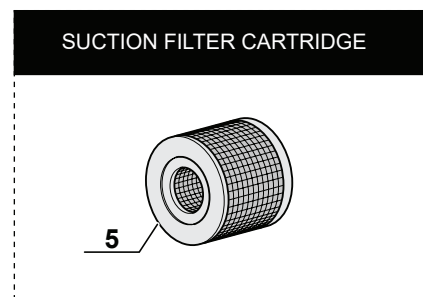
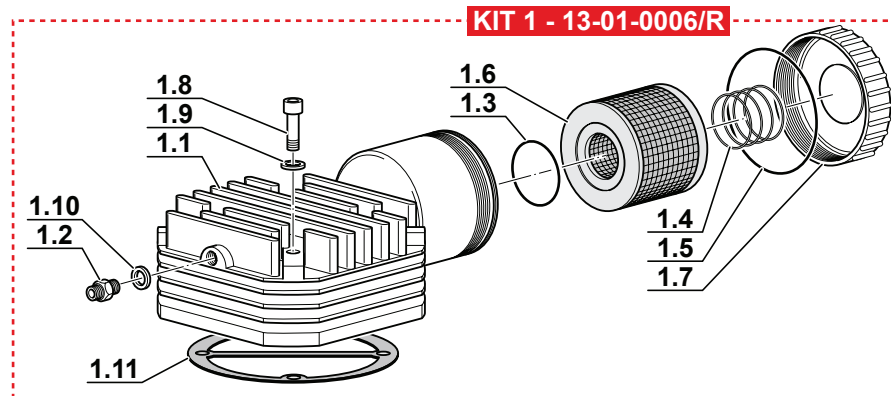


## 1<sup>st</sup> STAGE MCH-11-13-16-18

### For models by 01-2015

Pos.	Qty	Code	Description
<b>KIT1</b>	<b>1</b>	<b>13-01-0006/N/R</b>	<b>NEW 1ST STAGE HEAD COVER MCH13/16 KIT</b>
1.1	1	13-01-0006/N	NEW 1ST STAGE HEAD COVER MCH13/16
1.2	1	13-07-041	FITTING 3/8 TUBE
1.3	1	13-01-0013	O-R SUCTION FILTER 3137 NBR 70
1.4	1	13-01-0026	INTAKE FILTER SPRING
1.5	1	13-01-0011	INTAKE FILTER COVER O-RING MCH13/16
1.6	1	SC000370	SUCTION FILTER CARTRIDGE MCH13/16
1.7	1	13-01-0041	INTAKE FILTER COVER MCH13/16
1.8	4	VITE0890	SCREW ZINC. DIN 912
1.9	4	RON/8	WASHER FLAT ZINC
1.10	1	13-01-0009	COPPER WASHER 3/8
1.11	1	13-01-0005/N	1ST STAGE GASKET MCH/13 NEW HEAD
<b>KIT2a</b>	<b>1</b>	<b>13-01-0003/N/R</b>	<b>1ST STAGE CYLINDER HEAD 88MM KIT</b>
2.1	1	13-01-0005/N	1ST STAGE GASKET MCH/13 NEW HEAD
2.2	1	13-01-0004	1ST STAGE REED VALVE
2.3a	1	13-01-0003	1ST STAGE 88MM. GASKET UNDER HEAD
<b>KIT2b</b>	<b>1</b>	<b>16-01-0003/R</b>	<b>1ST STAGE CYLINDER HEAD 97MM KIT</b>
2.1	1	13-01-0005	1ST STAGE GASKET MCH/13 UPPER HEAD
2.2	1	13-01-0004	1ST STAGE REED VALVE
2.3b	1	16-01-0003	GASKET FIRST STAGE D. 97MM MCH16 UNDER HEAD
<b>KIT3a</b>	<b>1</b>	<b>13-01-0117/R</b>	<b>1ST STAGE MCH13 KIT</b>
3.1a	1	13-01-0117	1ST STAGE 88MM. PISTON MCH13
3.2a	4	13-01-0118	PISTON RINGS D. 88MM 1STA STAGE MCH13
3.3a	1	13-01-0116	FIRST STAGE 88MM PIN
3.4	2	13-00-0110	SEEGER RETAINING RING
<b>KIT3b</b>	<b>1</b>	<b>16-01-0117/R</b>	<b>1ST STAGE MCH16 KIT</b>
3.1b	1	16-01-0117	1ST STAGE PISTON D.95MM MCH16
3.2b	4	16-01-0118	PISTON RINGS DIA 95MM FIRST STAGE MCH16
3.3b	1	16-01-0116	FIRST STAGE 95MM PIN
3.4	2	13-00-0110	SEEGER RETAINING RING
<b>KIT4a</b>	<b>1</b>	<b>13-01-0002/R</b>	<b>1ST STAGE CYLINDER 88MM. MCH13 KIT</b>
4.1a	1	13-01-0002	1ST STAGE CYLINDER 88MM. MCH13
4.2	1	13-01-0007	O-RING 2400 NBR 70
4.3	4	13-00-0010	SCREW ZINC. DIN 912
4.4	4	RON/8	WASHER FLAT ZINC
4.5	4	13-00-0018	MIDDLE NUT ZINC.
4.6	4	13-01-0008	FIRST STAGE TIE ROD MCH13/16
<b>KIT4b</b>	<b>1</b>	<b>16-01-0002/R</b>	<b>1ST STAGE CYLINDER D.95MM MCH16 KIT</b>
4.1b	1	16-01-0002	1ST STAGE CYLINDER D.95MM MCH16
4.2	1	13-01-0007	O-RING 2400 NBR 70
4.3	4	13-00-0010	SCREW ZINC. DIN 912
4.4	4	RON/8	WASHER FLAT ZINC
4.5	4	13-00-0018	MIDDLE NUT ZINC.
4.6	4	13-01-0008	FIRST STAGE TIE ROD MCH13/16
5	1	SC000370	SUCTION FILTER CARTRIDGE MCH13/16

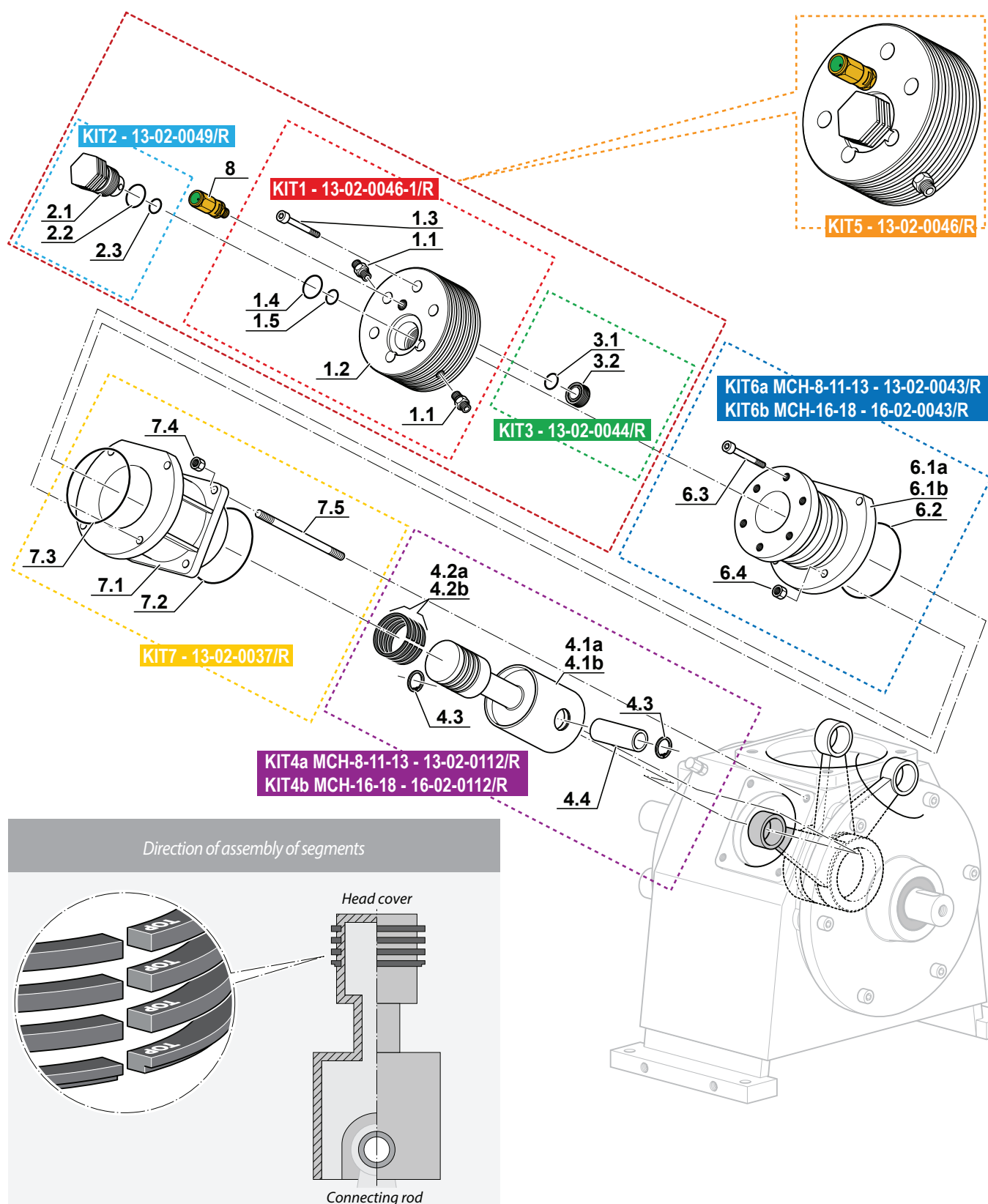
# 1<sup>st</sup> STAGE MCH-11-13-16-18 For models by 01-2015



## 2<sup>nd</sup> STAGE

Pos.	Qty	Code	Description
<b>KIT1</b>	<b>1</b>	<b>13-02-0046-1/R</b>	<b>SECOND STAGE HEAD MCH13/16 KIT</b>
1.1	2	13-02-0045/E	LONG STRAIGHT 1/4 PIPE FITTING
1.2	1	13-02-0046	SECOND STAGE HEAD MCH13/16
1.3	6	13-00-0075	SCREW ZINC.
1.4	1	13-02-0056	O-RING 4087 VITON NBR 90 SHORT
1.5	1	13-03-0029/90	O-RING VITON NBR 90 SHORT
<b>KIT2</b>	<b>1</b>	<b>13-02-0049/R</b>	<b>2ND STAGE PRESSURE VALVE ASS. MCH13/16 KIT</b>
2.1	1	13-02-0049	2ND STAGE PRESSURE VALVE ASS. MCH13/16
2.2	1	13-02-0056	O-RING 4087 VITON NBR 90 SHORT
2.3	1	13-03-0029/90	O-RING VITON NBR 90 SHORT
<b>KIT3</b>	<b>1</b>	<b>13-02-0044/R</b>	<b>2ND STAGE SUCTION VALVE ASSBLY</b>
3.1	1	13-03-0029/90	O-RING VITON NBR 90 SHORT
3.2	1	13-02-0044	2ND STAGE SUCTION VALVE ASSBLY
<b>KIT4a</b>	<b>1</b>	<b>13-02-0112/R</b>	<b>2ND STAGE PISTON DIA. 60/36MM MCH13 KIT</b>
4.1a	1	13-02-0112	2ND STAGE PISTON DIA. 60/36MM MCH13
4.2a	4	13-02-0113	PISTON RING DIA. 36MM 2ND STAGE MCH13
4.3	2	13-00-0110	SEEGER RETAINING RING
4.4	1	13-02-0111	2ND STAGE PIN
<b>KIT4b</b>	<b>1</b>	<b>16-02-0112/R</b>	<b>2ND STAGE PISTON D.60/38MM MCH16 KIT</b>
4.1b	1	16-02-0112	2ND STAGE PISTON D.60/38MM MCH16
4.2b	4	16-02-0113	2ND STAGE PISTON RINGS D.38MM MCH/16
4.3	2	13-00-0110	SEEGER RETAINING RING
4.4	1	13-02-0111	2ND STAGE PIN
<b>KIT5</b>	<b>1</b>	<b>13-02-0046/R</b>	<b>2ND STAGE HEAD COMPLETE WITH FITTING-ALVE</b>
<b>KIT6a</b>	<b>1</b>	<b>13-02-0043/R</b>	<b>2ND STAGE 36MM CYLINDER MCH13 KIT</b>
6.1a	1	13-02-0043	2ND STAGE 36MM CYLINDER MCH13
6.2	1	13-00-0039	O-RING 3237 NBR 70
6.3	6	13-00-0075	SCREW ZINC.
6.4	4	13-00-0018	MIDDLE NUT ZINC.
<b>KIT6b</b>	<b>1</b>	<b>16-02-0043/R</b>	<b>2ND STAGE CYLINDER D.38MM MCH16 KIT</b>
6.1b	1	16-02-0043	2ND STAGE CYLINDER D.38MM MCH16
6.2	1	13-00-0039	O-RING 3237 NBR
6.3	6	13-00-0075	SCREW ZINC.
6.4	4	13-00-0018	MIDDLE NUT ZINC.
<b>KIT7</b>	<b>1</b>	<b>13-02-0037/R</b>	<b>2ND STAGE 60MM. GUIDING CYLINDMCH13/16 KIT</b>
7.1	1	13-02-0037	2ND STAGE 60MM. GUIDING CYLINDMCH13/16
7.2	1	13-00-0015	O-RING 2275 NBR 70
7.3	1	13-00-0039	O-RING 3237 NBR 70
7.4	4	13-00-0018	MIDDLE NUT ZINC.
7.5	4	13-02-0040	2ND/3RD STAGE TIE ROD
8	1	13-00-0205	1ST STAGE SAFETY VALVE MCH-13-16 10BAR

## 2<sup>nd</sup> STAGE

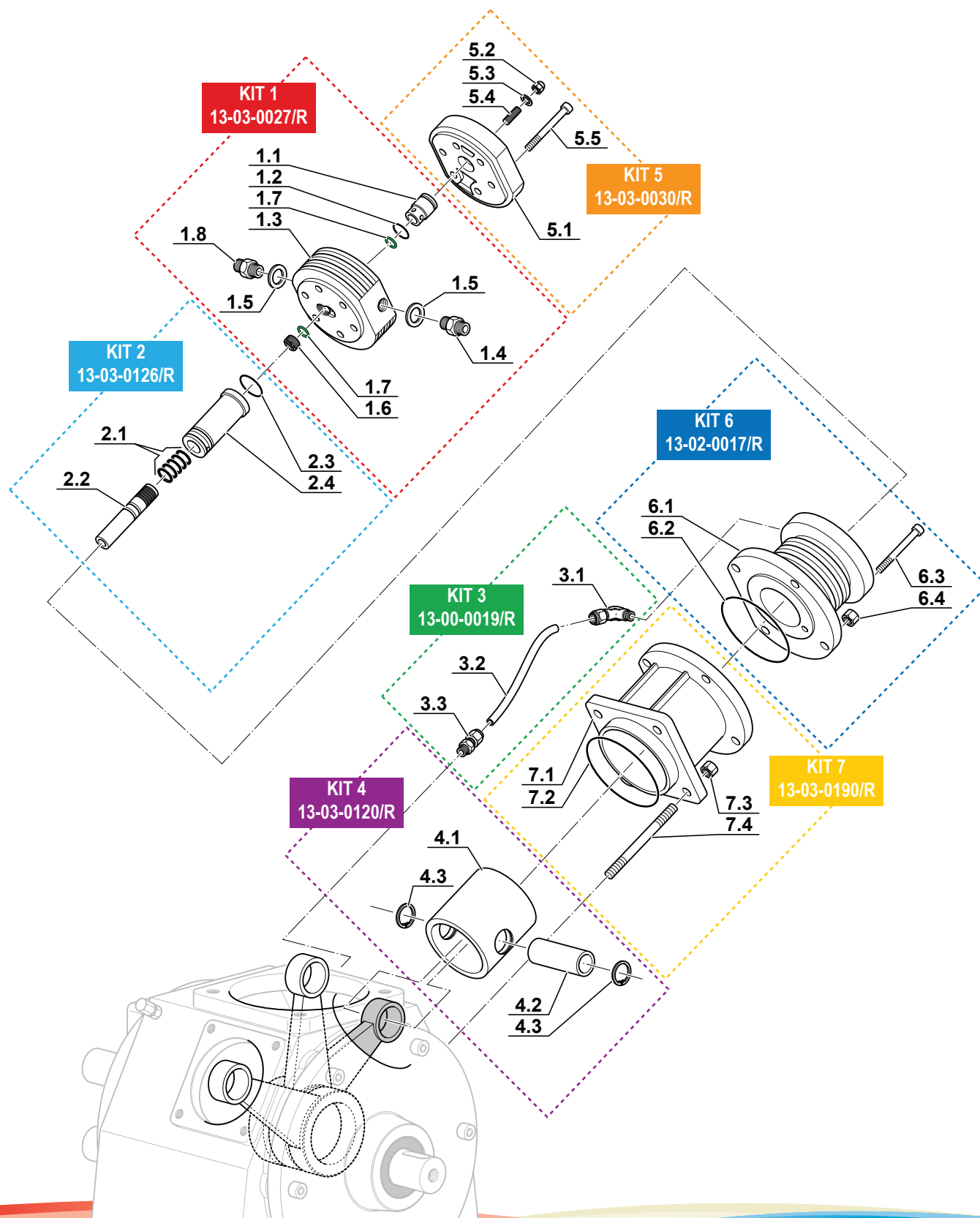


### 3<sup>rd</sup> STAGE G2 For models up to 03-2014

Pos.	Qty	Code	Description
<b>KIT1</b>	<b>1</b>	<b>13-03-0027/R</b>	<b>3RD STAGE HEAD FOR MCH13/16 KIT</b>
1.1	1	13-03-0028	3RD STAGE PRESSURE VALVE ASS MCH13/16
1.2	1	13-03-0029/90	O-RING VITON NBR 90 SHORT
1.3	1	13-03-0027	3RD ST.GE HEAD FOR MCH13/16
1.4	2	13-00-0025E	FITTING 1/4 G -PIPE
1.5	2	GUAR1319	COPPER WASHER
1.6	1	13-03-0020	3RD SUCTION VALVE ASSBLY MCH13/16
1.7	2	OR-2025/V-90	O-RING 2025 VITON 90
1.8	1	13-00-0175E	1/4 G TUBE 8MM FITTING
<b>KIT2</b>	<b>1</b>	<b>13-03-0126/R</b>	<b>PISTON 3RD STAGE 14 MCH13/16 KIT</b>
2.1	5	13-03-0158	3 <sup>RD</sup> STAGE SEGMENTS Ø14 COD. 0001400000 50
2.2	1	13-03-0126	PISTON 3RD ST.GE 14 DIA MM
2.3	1	13-03-0123	O-RING 2100 VITON NBR 90 SHORT
2.4	1	13-03-0125	3RD STAGE CYLINDER DIA 14MM MCH13/16
<b>KIT3</b>	<b>1</b>	<b>13-00-0019/R</b>	<b>LUBRICATION TUBE 3RD STAGE MCH13/16</b>
3.1	1	13-00-0021	FITTING 90° 1/8 NPT
3.2	1	13-00-0019	OIL LEVEL INDICATOR
3.3	1	RACC0818R	CONNECTION .DIAM. 8 1/8 FOR RILS TUBE
<b>KIT4</b>	<b>1</b>	<b>13-03-0120/R</b>	<b>PUSHING PISTON 3RD STAGE MCH13-16</b>
4.1	1	13-03-0120	PUSHING PISTON 60MM. MCH13-16
4.2	1	13-02-0111	2ND STAGE PIN
4.3	2	13-00-0110	SEEGER RETAINING RING
<b>KIT5</b>	<b>1</b>	<b>13-03-0030/R</b>	<b>3RD STAGE HEAD COVER KIT</b>
5.1	1	13-03-0030	3RD STAGE HEAD COVER
5.2	1	13-00-0032	STAINLESS STEEL CAP NUT
5.3	1	13-03-0033	COPPER WASHER MCH13/16
5.4	1	13-03-0034	8X25 STAINLESS STEEL DOWEL
5.5	6	13-00-0031	SCREW T.C.E. ZINC.
<b>KIT6</b>	<b>1</b>	<b>13-02-0017/R</b>	<b>3RD STAGE GUIDING CYLINDER MCH13/16 KIT</b>
6.1	1	13-02-0017	3RD STAGE GUIDING CYLINDER MCH13/16
6.2	1	13-00-0039	O-RING 3237 NBR 70
6.3	6	13-00-0031	SCREW ZINC.
6.4	4	13-00-0018	MIDDLE NUT ZINC.
<b>KIT7</b>	<b>1</b>	<b>13-03-0190/R</b>	<b>LOWER 3RD STAGE 60MM GUIDING CYLINDER KIT</b>
7.1	1	13-03-0190	LOWER 3RD STAGE 60MM. GUIDING CYLINDER
7.2	1	13-00-0015	O-RING 2275 NBR 70
7.3	4	13-00-0018	MIDDLE NUT ZINC.
7.4	4	13-02-0040	2ND/3RD STAGE TIE ROD

### 3<sup>rd</sup> STAGE G2

For models up to 03-2014

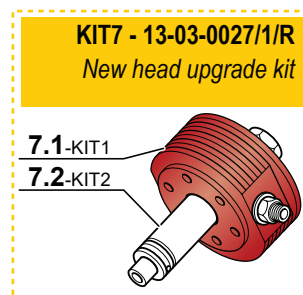
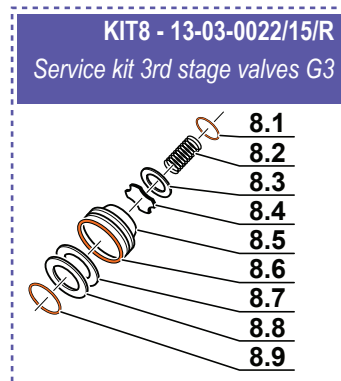
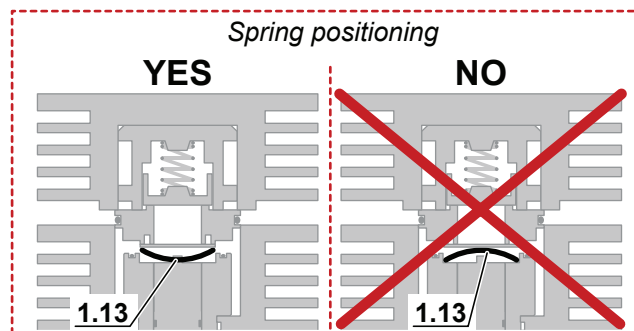




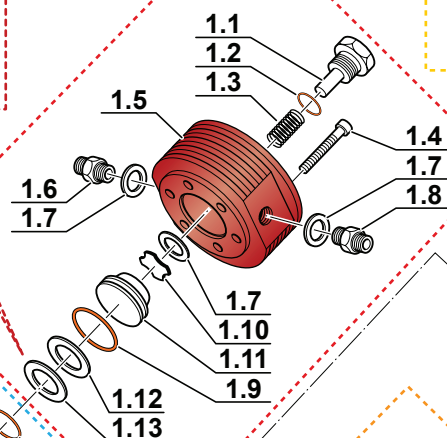
### 3<sup>rd</sup> STAGE G3 For models by 03-2014

Pos.	Qty	Code	Description
<b>KIT1</b>	<b>1</b>	<b>13-03-0022-2/R</b>	<b>3RD STAGE NEW HEAD MCH-13-16</b>
1.1	1	13-03-0026	SPINDLE SPRING VALVE 3RD STAGE
1.2	1	13-03-0029/90	O-RING VITON NBR 90 SHORT
1.3	1	36-04-017	INOX SPRING
1.4	6	VITE0845	SCREW ZINC. DIN912
1.5	1	13-03-0027/1	KIT 3RD STAGE NEW HEAD MCH-13-16
1.6	1	13-00-0175E	1/4 G TUBE 8MM FITTING
1.7	3	GUAR1319	COPPER WASHER 1/4
1.8	1	13-00-0025E	FITTING 1/4 G -PIPE 6MM
1.9	1	13-03-0123	O-RING 2100 VITON NBR 70 SHORT
1.10	1	13-03-0019	STAR PLATE EXHAUST VALVE 3RD STAGE MCH-13-16
1.11	1	13-03-0022/15	BODY VALVE 3RD STAGE MCH-13-16
1.12	1	36-04-018	DISC VALVE SUCTION MCH36 (24X15,2X1)
1.13	1	36-04-020	SPRING 24X15,2 H.O,2 4° ST. MCH-36
<b>KIT2</b>	<b>1</b>	<b>13-03-0122/R</b>	<b>PISTON 3RD ST.GE 14 MCH13/16 KIT</b>
2.1	5	13-03-0158	3 <sup>RD</sup> STAGE SEGMENTS Ø14 COD. 0001400000 S0
2.2	1	13-03-0122	PISTON 3RD ST.GE Ø14MM WITH PEG ACC. AVP
2.3	1	13-03-0123	O-RING 2100 VITON NBR 70 SHORT
2.4	1	13-03-0128	3RD STAGE CYL. Ø14MM MCH13/16 SUCTION VALVE
<b>KIT3</b>	<b>1</b>	<b>13-00-0019/R</b>	<b>LUBRICATION TUBE 3RD STAGE MCH13/16</b>
3.1	1	13-00-0021	FITTING 90° 1/8 NPT
3.2	1	13-00-0019	OIL LEVEL INDICATOR
3.3	1	RACC0818R	CONNECTION .DIAM. 8 1/8 FOR RILS TUBE
<b>KIT4</b>	<b>1</b>	<b>13-03-0120/R</b>	<b>PUSHING PISTON 3RD SATGE MCH13-16</b>
4.1	1	13-03-0120	PUSHING PISTON 60MM. MCH13-16
4.2	1	13-02-0111	2ND STAGE PIN
4.3	2	13-00-0110	SEEGER RETAINING RING
<b>KIT5</b>	<b>1</b>	<b>13-02-0017/R</b>	<b>3RD STAGE GUIDING CYLINDER MCH13/16 KIT</b>
5.1	1	13-02-0017	3RD STAGE GUIDING CYLINDER MCH13/16
5.2	1	13-00-0039	O-RING 3237 NBR 70
5.3	6	VITE0845	SCREW ZINC. DIN912
5.4	4	13-00-0018	MIDDLE NUT ZINC.
<b>KIT6</b>	<b>1</b>	<b>13-03-0190/R</b>	<b>LOWER 3RD STAGE 60MM GUIDING CYLINDER KIT</b>
6.1	1	13-03-0190	LOWER 3RD STAGE 60MM. GUIDING CYLINDER
6.2	1	13-00-0015	O-RING 2275 NBR 70
6.3	4	13-00-0018	MIDDLE NUT ZINC.
6.4	4	13-02-0040	2ND/3RD STAGE TIE ROD
<b>KIT7</b>	<b>1</b>	<b>13-03-0027/1/R</b>	<b>NEW HEAD UPGRADE KIT</b>
7.1	1	13-03-0022-2/R	3RD STAGE NEW HEAD MCH-13-16
7.2	1	13-03-0122/R	PISTON 3RD ST.GE 14 MCH13/16 KIT
<b>KIT8</b>	<b>1</b>	<b>13-03-0022/15/R</b>	<b>SERVICE KIT 3RD STAGE VALVES G3</b>
8.1	1	13-03-0029/90	O-RING VITON NBR 90 SHORT
8.2	1	36-04-017	INOX SPRING Ø11X8,6 L. 18,5 WIRE 1,2 4° ST. MCH-36
8.3	1	GUAR1319	COPPER WASHER 1/4
8.4	1	13-03-0019	STAR PLATE EXHAUST VALVE 3RD STAGE MCH-13-16
8.5	1	13-03-0022/15	BODY VALVE 3RD STAGE MCH-13-16
8.6	1	13-03-0123	O-RING 2100 VITON NBR 70 SHORT
8.7	1	36-04-018	DISC VALVE SUCTION MCH36
8.8	1	36-04-020	SPRING
8.9	1	13-03-0123	O-RING 2100 VITON NBR 70 SHORT

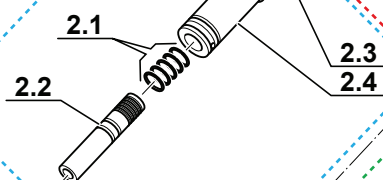
### 3<sup>rd</sup> STAGE G3 For models by 03-2014



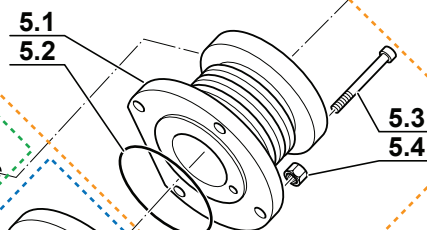
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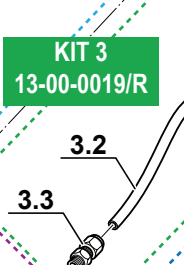
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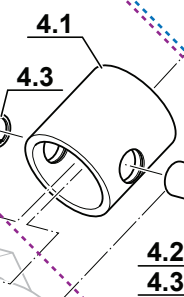
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13-02-0017/R



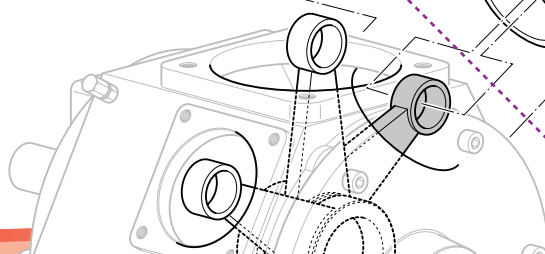
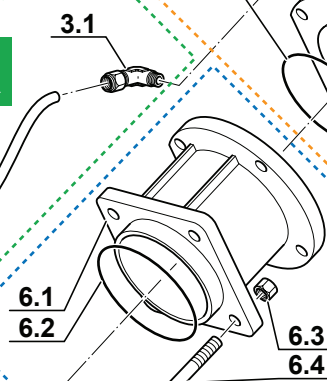
**KIT 3**  
13-00-0019/R



**KIT 4**  
13-03-0120/R



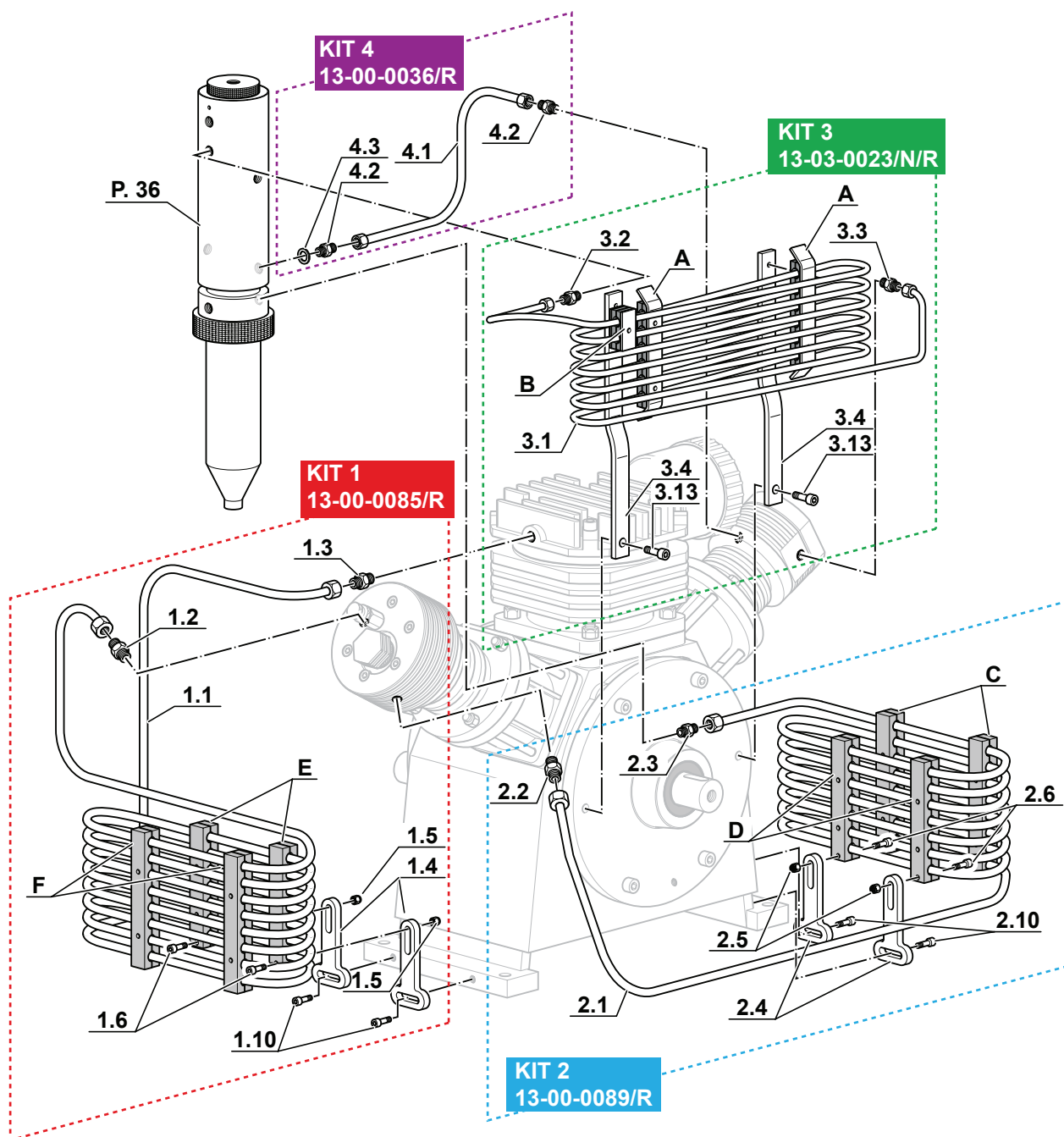
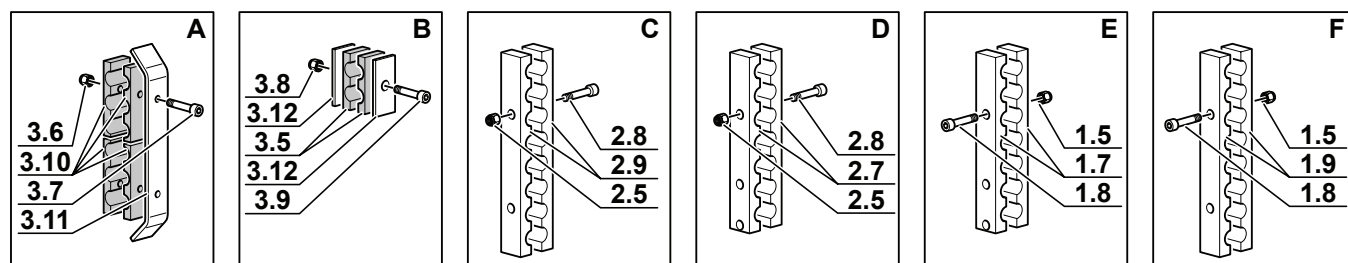
**KIT 6**  
13-03-0190/R



## PRESSURE CIRCUIT

Pos.	Qty	Code	Description
<b>KIT1</b>	<b>1</b>	<b>13-00-0085/R</b>	<b>1ST-2ND STAGE 10MM COOLING PIPE KIT</b>
1.1	1	13-00-0085	1ST-2ND STAGE 10MM COOLING PIPE
1.2	1	13-02-0045E	FITTING 1/4 G - TUBE 10MM HEAD 2°STD MCH 13/16
1.3	1	13-00-0178E	FITTING TUBE10MM 1/4 NPT
1.4	2	13-00-0091	PIPE HOLDING BRACKET 45X15MM
1.5	10	13-00-0137	SELF LOCKING NUT
1.6	4	13-00-0067	SCREW ZINC. DIN 912
1.7	4	13-00-0186	3 HOLE PIPE-HOLDING BRACKET
1.8	8	13-00-0087	SCREW ZINC. DIN 912
1.9	4	13-00-0197	2 HOLE PIPE-HOLDING BRACKET
1.10	4	VITE0620	SCREW ZINC. DIN912
<b>KIT2</b>	<b>1</b>	<b>13-00-0089/R</b>	<b>2ND-1ST STAGE 10MM COOLING PIPE KIT</b>
2.1	1	13-00-0089	2ND-3RD STAGE 10MM COOLING PIPE KIT
2.2	1	13-02-0045E	FITTING 1/4 G - TUBE 10MM HEAD 2°STD MCH 13/16
2.3	1	13-00-0026E	STRAIGHT FITTING 1/4 G -TUBO 10MM
2.4	2	13-00-0083	PIPE HOLDING BRACKET 75X15MM. MCH13/16
2.5	10	13-00-0137	SELF LOCKING NUT HIGH
2.6	4	13-00-0067	SCREW ZINC. DIN 912
2.7	4	13-00-0186	3 HOLE PIPE-HOLDING BRACKET
2.8	8	13-00-0087	SCREW ZINC. DIN 912
2.9	4	13-00-0197	2 HOLE PIPE-HOLDING BRACKET
2.10	4	VITE0620	SCREW ZINC. DIN912
<b>KIT3</b>	<b>1</b>	<b>13-03-0023/N/R</b>	<b>3RD-SEPARATOR 6MM COOLING PIPE KIT</b>
3.1	1	13-03-0023/N	6MM COOLING PIPE 3RD-SEPARATOR
3.2	1	13-00-0174E	STRAIGHT 1/8 PIPE FITTING 6
3.3	1	13-00-0025E	FITTING 1/4 G -TUBO 6MM ERMETO
3.4	2	13-00-0133	TUBE CLAMP 6 MM SEPARATOR-4TH STAGE
3.5	2	13-00-0134/1	ANTI VIBRATION BLOCK TUBE6 2 HOLE
3.6	4	DADM6AUTBAS	SELF LOCKING NUT LOW DIN 985
3.7	4	13-00-0041	SCREW ZINC. DIN 912
3.8	1	DA05	SELF LOCKING NUT ZINC. LOW
3.9	1	VITE0525Z	SCREW ZINC. DIN912
3.10	8	13-00-0134	ANTI VIBRATION BLOCK TUBE6 3 HOLE
3.11	2	13-00-0136	DOUBLE 6MM. PIPE-HOLDING BRACKET MCH13/16
3.12	2	13-00-0135	SINGLE 6MM. PIPE-HOLDING BRACKET MCH13/16
3.13	2	13-00-0075	SCREW ZINC
<b>KIT4</b>	<b>1</b>	<b>13-00-0036/R</b>	<b>SEPARATOR-3RD 8MM COOLING PIPE KIT</b>
4.1	1	13-00-0036	TUBE 8MM. 3RD STAGE/SEPARATOR(D) MCH13/16
4.2	2	13-00-0175E	1/4 G TUBE 8MM FITTING
4.3	1	GUAR1319	COPPER WASHER

## PRESSURE CIRCUIT



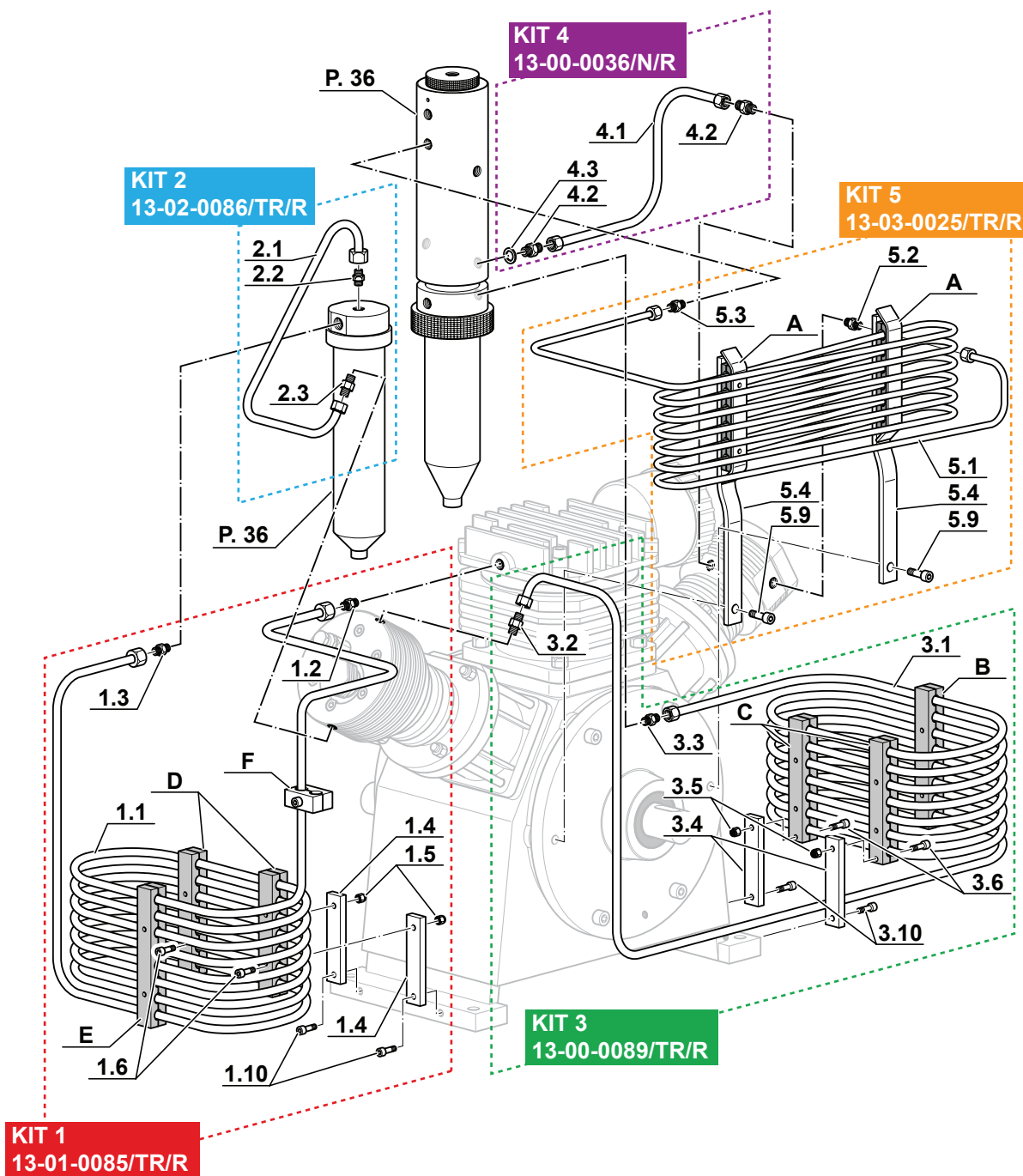
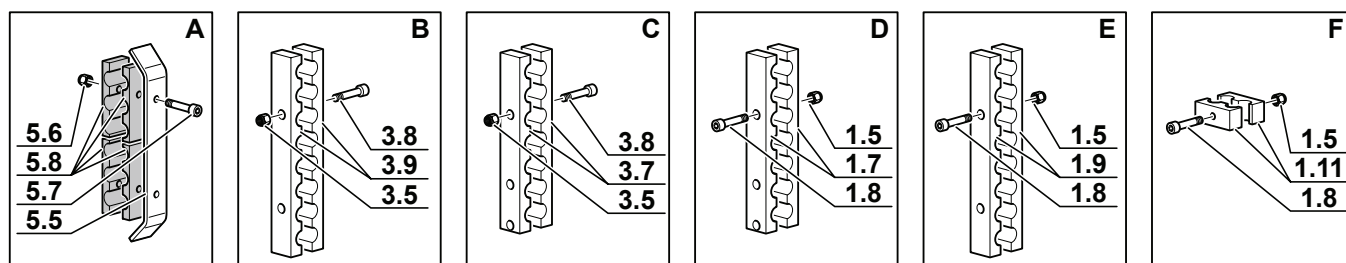
## PRESSURE CIRCUIT

### Mod: Tropical - Tropical Plus

Pos.	Qty	Code	Description
<b>KIT1</b>	<b>1</b>	<b>13-01-0085/TR/R</b>	<b>COOLING PIPE 12MM 1ST-SEP. MCH13/16 TR-TRPL KIT</b>
1.1	1	13-01-0085/TR	COOLING PIPE 12MM 1ST-SEPARATOR MCH13/16 T-TP
1.2	1	RACC/E2115121/4	STRAIGHT FITTING 1/4NPT TUBE 12MM SHORT
1.3	1	RACC/E212112LG1/2	FITTING E212-112L G1/2" WITH GASKET
1.4	2	13-00-0083	PIPE HOLDING BRACKET 75X15MM. MCH13/16
1.5	8	13-00-0137	SELF LOCKING NUT HIGH
1.6	2	13-00-0067	SCREW ZINC. DIN 912
1.7	4	13-00-0197/TR	2 HOLE PIPE-HOLDING BRACKET
1.8	6	13-00-0087	SCREW ZINC. DIN 912
1.9	2	13-00-0197/TR	2 HOLE PIPE-HOLDING BRACKET
1.10	4	VITE0620	SCREW ZINC. DIN912
1.11	2	13-00-0196/TR	2 HOLE PIPE-HOLDING BRACKET
<b>KIT2</b>	<b>1</b>	<b>13-02-0086/TR/R</b>	<b>COOLING PIPE 12MM SEP.-2ND MCH13/16 TR-TRPL KIT</b>
2.1	1	13-02-0086/TR	COOLING PIPE 12MM SEP.-2ND MCH13/16 T-TP
2.2	1	RACC/E212112L38	FITTING E212-112L G3/8"
2.3	1	13-02-0047E	STRAIGHT FITTING 1/4G TUBE 12MM
<b>KIT3</b>	<b>1</b>	<b>13-00-0089/TR/R</b>	<b>COOLING PIPE 12MM 2ND-SEP. MCH13/16 TR-TRPL KIT</b>
3.1	1	13-00-0089/TR	COOLING PIPE 12MM 2ND-SEP. MCH13/16 TR-TR.PL
3.2	1	13-02-0047E	STRAIGHT FITTING 1/4G TUBE 12MM
3.3	1	13-02-0048E	FITTING 1/4 - M18X1,5 TUBE Ø12
3.4	2	13-00-0083	PIPE HOLDING BRACKET 75X15MM. MCH13/16
3.5	8	13-00-0137	SELF LOCKING NUT M6 HIGH
3.6	2	13-00-0067	SCREW 6X35 T.C.E. ZINC. DIN 912
3.7	4	13-00-0197/TR	2 HOLE PIPE-HOLDING BRACKET
3.8	4	13-00-0087	SCREW T.C.E. ZINC. 6X30 DIN 912
3.9	2	13-00-0186/TR	3 HOLE PIPE-HOLDING BRACKET
3.10	4	VITE0620	SCREW T.C.E. ZINC. 6X20 DIN912
<b>KIT4</b>	<b>1</b>	<b>13-00-0036/N/R</b>	<b>TUBE 8MM SEP/3° ST.(D) KIT</b>
4.1	1	13-00-0036/N	TUBE 8MM SEP/3° ST.(D)
4.2	2	13-00-0175E	1/4 G TUBE 8MM FITTING
4.3	1	GUAR1319	COPPER WASHER 1/4
<b>KIT5</b>	<b>1</b>	<b>13-03-0025/TR/R</b>	<b>COOLING TUBE MCH13/16 TROPICAL PLUS 6X1 KIT</b>
5.1	1	13-03-0023/N	COOLING TUBE MCH13/16 TROPICAL PLUS 6X1
5.2	1	RACC/E212-106LG	FITTING E212-106L G1/4"
5.3	1	RACC/E231506L18	1/8" NPT - TUBE6 FITTING
5.4	2	13-00-0133/TR	PIPE HOLDING BRACKET 6MM MCH13/16 TROPICAL
5.5	2	13-00-0136	DOUBLE 6MM. PIPE-HOLDING BRACKET MCH13/16
5.6	4	DADM6AUBAS	SELF LOCKING NUT LOW M6 DIN 985
5.7	4	13-00-0041	SCREW T.C.E. ZINC. 6X25 DIN 912
5.8	8	13-00-0134	ANTI VIBRATION BLOCK TUBE6 3 HOLE
5.9	2	13-00-0075	SCREW T.C.E. ZINCATA 8X30

## PRESSURE CIRCUIT

Mod: Tropical - Tropical Plus

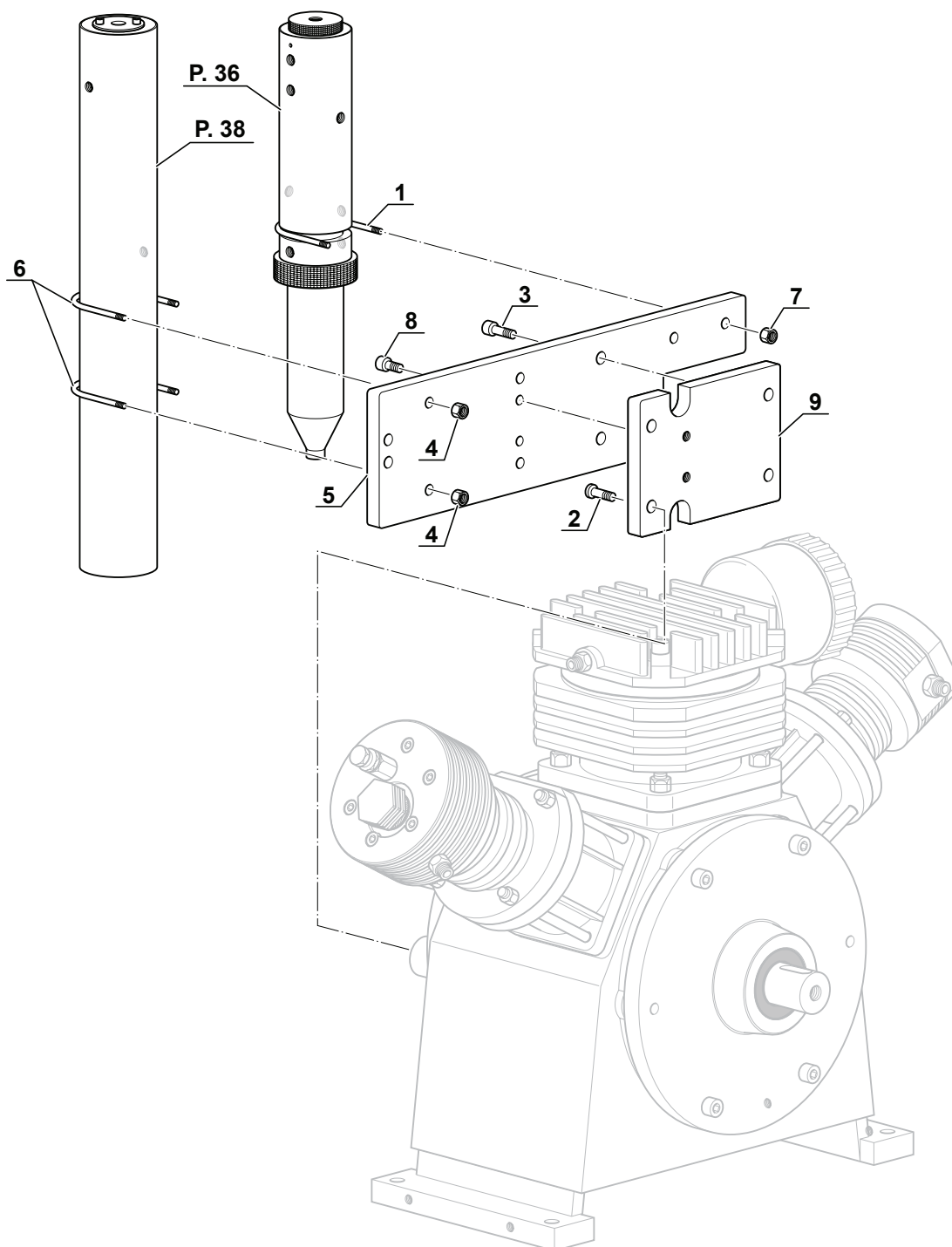


## SUPPORT

Pos.	Qty	Code	Description
1	1	13-00-0102	SEPARATOR CLAMP
2	2	VITE0825	SCREW ZINC. REDUCED HEAD
3	2	VITE0840	SCREW ZINC.
4	4	13-00-0018	MIDDLE NUT ZINC.
5	1	13-00-0094/1	HOLD-FILTERS PLATE MCH13/16
6	2	13-00-0093	FILTER HOLDING BRACKET MCH13/16
7	2	13-00-0101	SELF-LOCKING NUT
8	2	VITE0820	SCREW ZINC.
9	1	13-00-0069	COUNTER FILTERS PLATE MCH13/16



## SUPPORT





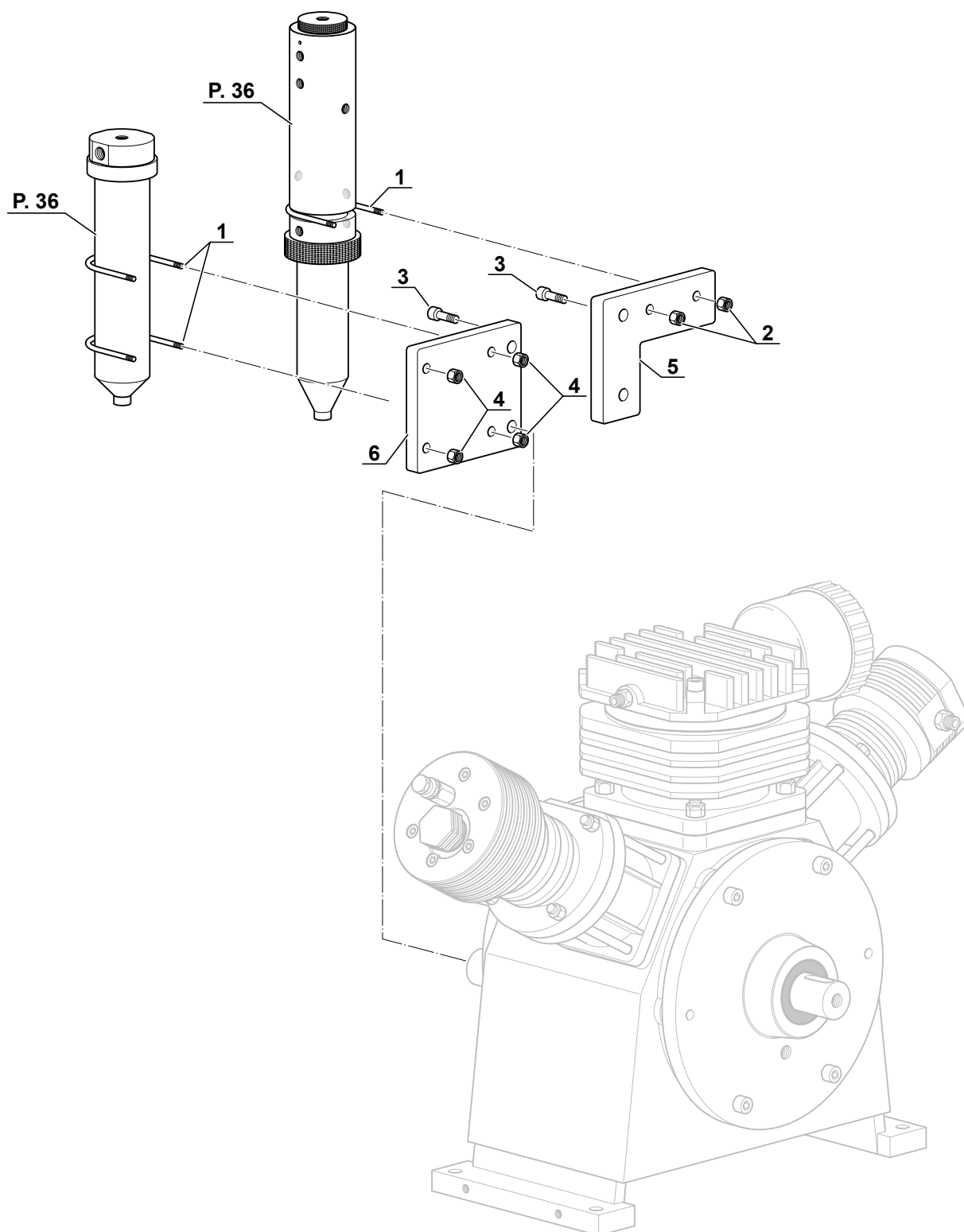
## SUPPORT

### Mod: Tropical - Tropical Plus

Pos.	Qty	Code	Description
1	3	13-00-0102	SEPARATOR CLAMP
2	2	13-00-0101	8MM SELF-LOCKING NUT
3	4	13-00-0048	SCREW ZINC. DIN 912
4	4	13-00-0018	MIDDLE NUT ZINC.
5	1	13-00-0094/1	CONDENSATE SEPARATOR PLATE MCH13-16 ZINC.
6	1	13-00-0094/2	SQUARE CONDENSATE SEP. PLATE MCH13-16 ZINC.

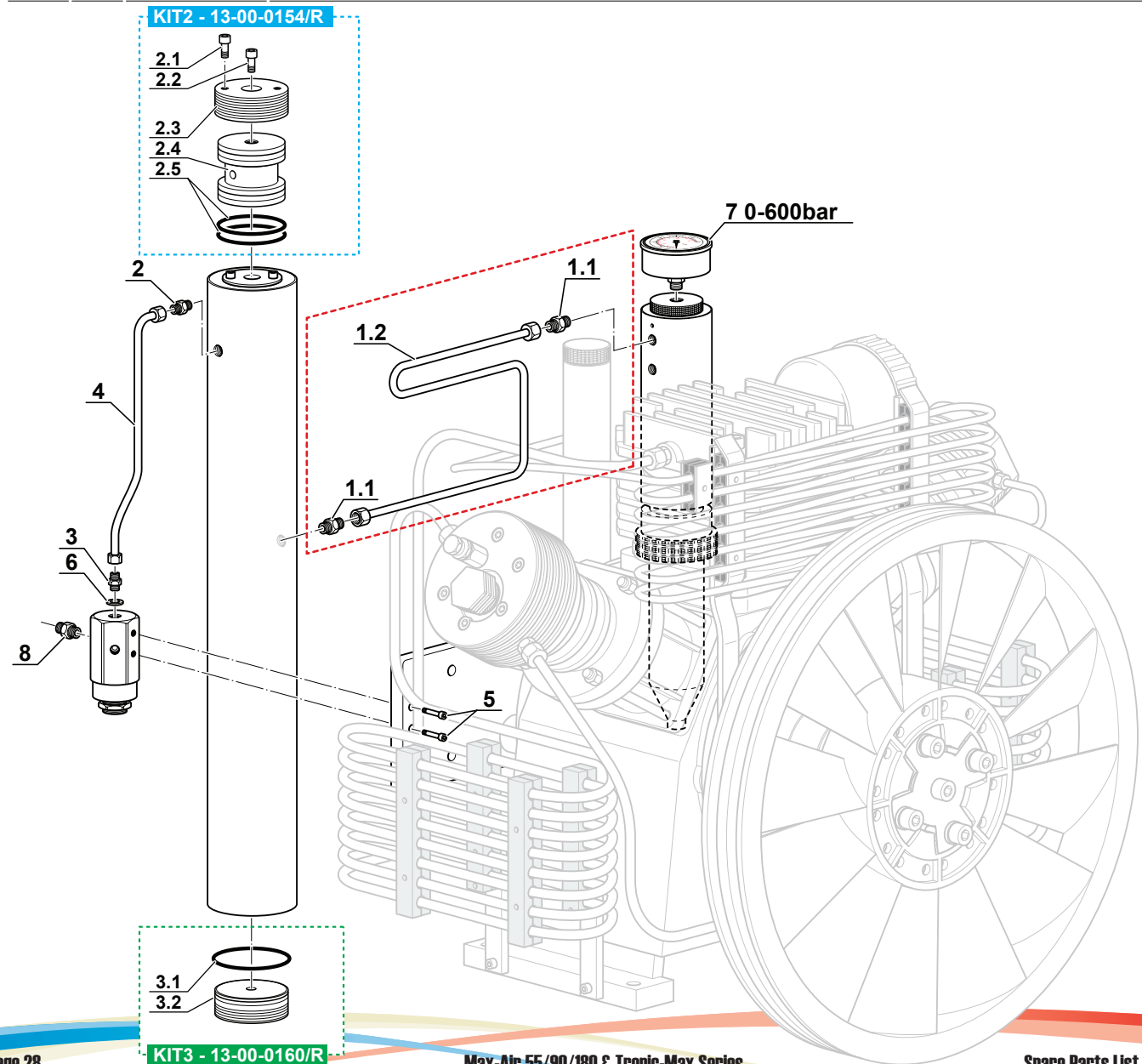
## SUPPORT

Mod: Tropical - Tropical Plus



## FILTERING CIRCUIT

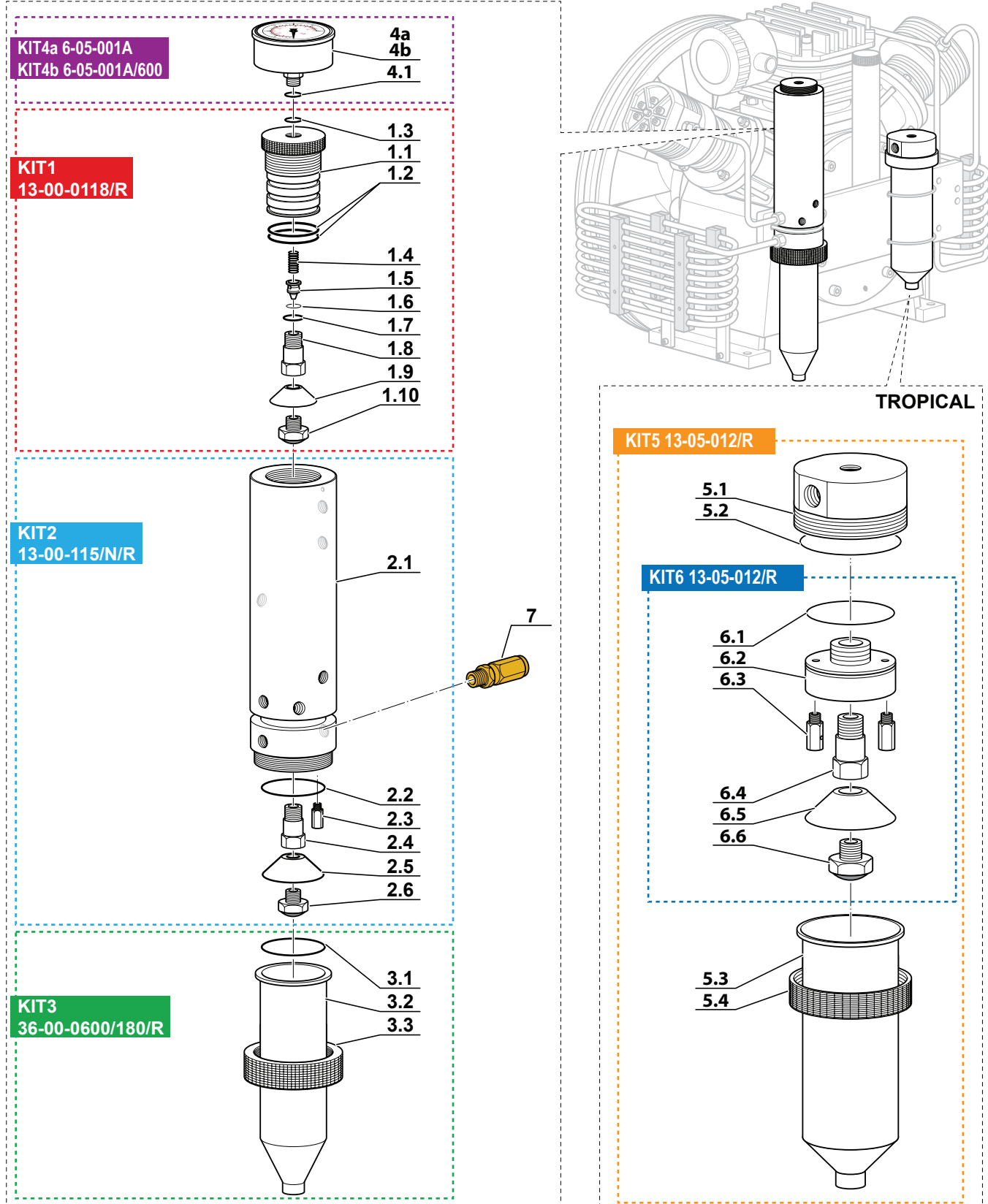
Pos.	Qty.	Code	Description
1.1	2	13-00-0174E	FITTING 1/8 NPT TUBE 6 mm
1.2	1	TUBO/MCH13/B/N	SEPARATOR-FILTER TUBE CONNECTION
2	1	13-00-0174E	FITTING 1/8 NPT TUBE 6 mm
3	1	13-00-0025E	FITTING 1/4 G -TUBO 6mm
4	1	13-04-0320	FILTER-VMP TUBE CONNECTION
5	1	13-00-0084	SCREW ZINC.
6	1	GUAR1420	COPPER GASKET
7	1	6-05-001A/600	MANOMETER 0-600 BAR
8	1	13-00-0174	STRAIGHT 1/8 PIPE FITTING 6
<b>KIT 2</b>	<b>1</b>	<b>13-00-0154/R</b>	<b>MAXIFILTER TOP PLUG KIT</b>
2.1	2	VITE0812E	T.C.E. INOX 8X12 SCREW
2.2	1	VITE0830	SCREW T.C.E. INOX 8X30
2.3	1	13-00-0154	UPPER FILTER CAP
2.4	1	13-00-0156	INTERNAL FILTER CAP
2.5	2	13-00-0155	O-R CAP FILTER
<b>KIT 3</b>	<b>1</b>	<b>13-00-0160/R</b>	<b>LOWER FILTER CAP KIT</b>
3.1	1	13-00-0155	O-R CAP FILTER
3.2	1	13-00-0160	LOWER FILTER CAP



## CONDENSATE SEPARATOR

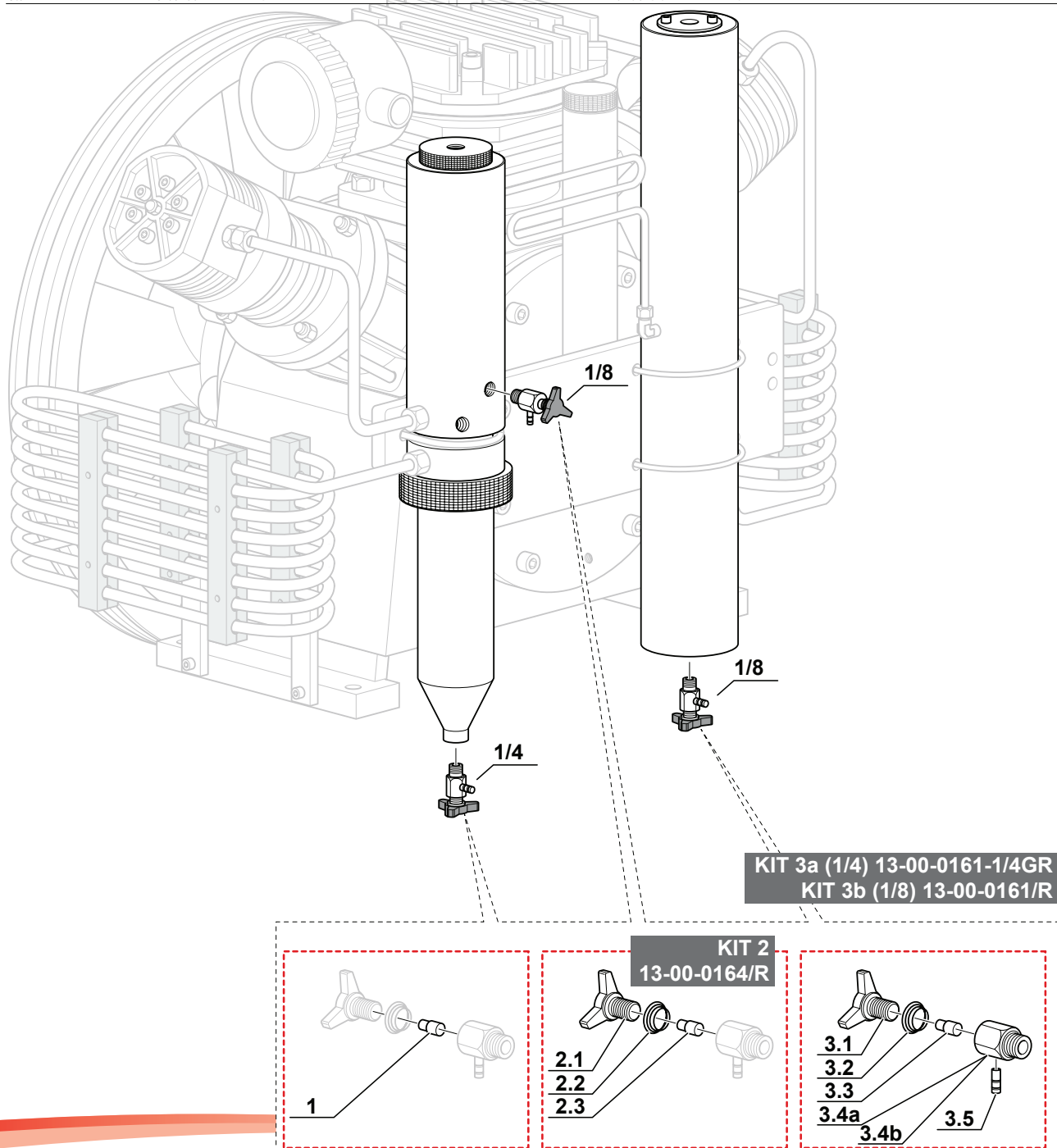
Pos.	Qty	Code	Description
<b>KIT1</b>	<b>1</b>	<b>13-00-0118/R</b>	<b>CONDENSATE SEPARATOR PLUG KIT</b>
1.1	1	13-00-0118	CONDENSATE SEPARATOR PLUG
1.2	2	OR-4143/90	O RING 4143 NBR 90
1.3	1	OR-2018/90	O RING 2018 NBR 90
1.4	1	SC000492/D	CHECK VALVE SPRING
1.5	1	SC000492/C	CHECK VALVE PISTON
1.6	1	OR-2021/90	O RING 2021 NBR 90
1.7	1	OR-114/90	O RING 114 NBR 90
1.8	1	13-00-0121	MCH-13/16 SEPARATOR FITTING
1.9	1	ROND/38/12,5	WASHER
1.10	1	SILENZ/E90A4003	SILENCER
<b>KIT2</b>	<b>1</b>	<b>13-00-115/N/R</b>	<b>NEW SEPARATOR BODY MCH13/16 KIT</b>
2.1	1	13-00-0115/N	NEW SEPARATOR BODY MCH13/16
2.2	1	36-05-008	O-RING 2212 NBR90 MCH36
2.3	1	13-00-0141	NEW CONDENSATE SEPARATOR DIFFUSER MCH13/16
2.4	1	13-00-0121	MCH-13/16 SEPARATOR FITTING
2.5	1	ROND/48/12,5	WASHER
2.6	1	SILENZ/E90A4003	SILENCER
<b>KIT3</b>	<b>1</b>	<b>36-00-0600/180/R</b>	<b>D 54 AISI 316L LUNGH. 180MM SEPARATOR KIT</b>
3.1	1	36-05-008	O-RING 2212 NBR90 MCH36
3.2	1	36-00-0600/180	SEPARATOR
3.3	1	36-05-013	SEPARATOR NUT MCH36
<b>KIT4a</b>	<b>1</b>	<b>6-05-001A</b>	<b>MANOMETER 0-400 BAR MCH/6</b>
4.1	1	OR-2018/90	O RING 2018 NBR 90
<b>KIT4b</b>	<b>1</b>	<b>6-05-001A/600</b>	<b>MANOMETER 0-600 BAR MCH/6</b>
4.1	1	OR-2018/90	O RING 2018 NBR 90
<b>KIT5</b>	<b>1</b>	<b>13-05-012/R</b>	<b>CONDENSATE SEP. G3/8 MCH-13-16 TROPICAL KIT</b>
5.1	1	36-05-012	3RD STAGE G3/8 SEPARATOR RIGHT PLUG
5.2	1	36-05-008	O-RING 2212 NBR90 MCH36
5.3	1	36-00-0600/180	CONDENSATE SEPARATOR PIPE, STAINLESS
5.4	1	36-05-013	SEPARATOR RING
6.1	1	OR-2150	OR- 2150 NBR 70
6.2	1	36-05-050/ALL	MCH-13/16 SEPARATOR FITTING INTERNAL PLUG
6.3	2	13-00-0141	NEW CONDENSATE SEPARATOR DIFFUSER MCH13/16
6.4	1	13-00-0121	MCH-13/16 SEPARATOR FITTING
6.5	1	ROND/48/12,5	WASHER
6.6	1	SILENZ/E90A4003	SILENCER
<b>KIT6</b>	<b>1</b>	<b>36-05-050/ALL/R</b>	<b>MCH-13/16 SEPARATOR FITTING INTERNAL PLUG KIT</b>
6.1	1	OR-2150	OR- 2150 NBR 70
6.2	1	36-05-050/ALL	MCH-13/16 SEPARATOR FITTING INTERNAL PLUG
6.3	2	13-00-0141	NEW CONDENSATE SEPARATOR DIFFUSER MCH13/16
6.4	1	13-00-0121	MCH-13/16 SEPARATOR FITTING
6.5	1	ROND/48/12,5	WASHER
6.6	1	SILENZ/E90A4003	SILENCER
7	1	13-00-0206	2ND STAGE SAFETY VALVE 70BAR

## CONDENSATE SEPARATOR



## CONDENSATE DISCHARGE

Pos.	Qty.	Code	Description
1	1	13-00-0162	CONDENSATE DISCHARGE NYLON SEAT
KIT 2	1	13-00-0164/R	CONDENSATE DISCHARGE WHEEL VALVE KIT
2.1	1	13-00-0164	CONDENSATE DISCHARGE KNOB
2.2	1	13-00-0163	CONDENSATE DISCHARGE SPRING
2.3	1	13-00-0162	CONDENSATE DISCHARGE NYLON SEAT
KIT 3a	1	13-00-0161-1/4G/R	CONDENSATE DISCHARGE BODY VALVE 1/4 COMPLETE
KIT 3b	1	13-00-0161-R	CONDENSATE DISCHARGE BODY VALVE 1/8 NPT COMPLETE
3.1	1	13-00-0164	CONDENSATE DISCHARGE KNOB
3.2	1	13-00-0163	CONDENSATE DISCHARGE SPRING
3.3	1	13-00-0162	CONDENSATE DISCHARGE NYLON
3.4	1	13-00-0161	CONDENSATE DISCHARGE BODY VALVE 1/8 NPT
3.5	1	6-05-004F	DRAIN VALVE PIN

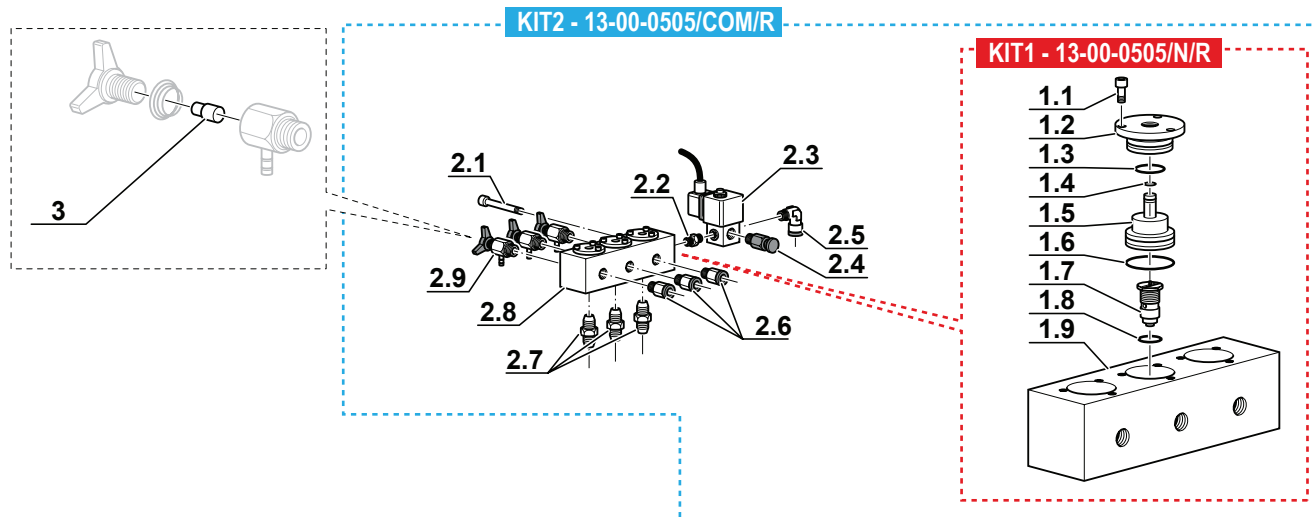


## CONDENSATE DISCHARGE

Pos.	Qty	Code	Description
<b>KIT1</b>	<b>1</b>	<b>13-00-0505/N/R</b>	<b>CONDENSATE DISCHARGE VALVE KIT</b>
1.1	12	36-07-070	SCREW TCEIZN M5X12-8.8 MCH36
1.2	3	13-00-0506	CONDENSATE DISCHARGE BODY VALVE CAP
1.3	3	OR-2118	O RING 2118 70-75 SH (29.87X1.78)
1.4	3	OR-2018	O RING 2018 70-75 SH (4,48X1,78)
1.5	3	13-00-0507/A	CONDENSATE DISCHARGE VALVE PISTON
1.6	3	OR-2100	O RING 2100 NBR 70SH
1.7	3	SC000337/C/R	PRESSURE REDUCER BODY INPUT 300/200BAR
1.8	3	OR-114/90	O RING 114 90 SH
1.9	1	13-00-0505/N	CONDENSATE DISCHARGE BODY VALVE MCH13-16
<b>KIT2</b>	<b>1</b>	<b>13-00-0505/COM/R</b>	<b>COMPACT CONDENSATE DISCHARGE KIT</b>
2.1	2	VITE0645I	SCREW T.C.E. INOX 6X45
2.2	1	13-00-0142	STRAIGHT FITTING M 1/8 NPT - M 1/8 NPT
2.3	1	13-04-0221/N	LP SOLENOID VALVE
2.4	1	13-03-0179	2ND STAGE SAFETY VALVE
2.5	1	RACC/E2L31C08	TURNING FITTING 1/8M TUBE6
2.6	3	RACC/E2001007W	1/8 E2001007W FITTING WITH OR
2.7	3	13-00-0174E	STRAIGHT FITTING 1/8 NPT PIPE 6MM ERMETO
2.8	1	13-00-0505/N/R	CONDENSATE DISCHARGE VALVE KIT
2.9	3	13-00-0161/R	CONDENSATE DISCHARGE BODY VALVE 1/8 NPT KIT
3	1	13-00-0162	CONDENSATE DISCHARGE NYLON



## CONDENSATE DISCHARGE



## SAFETY VALVE

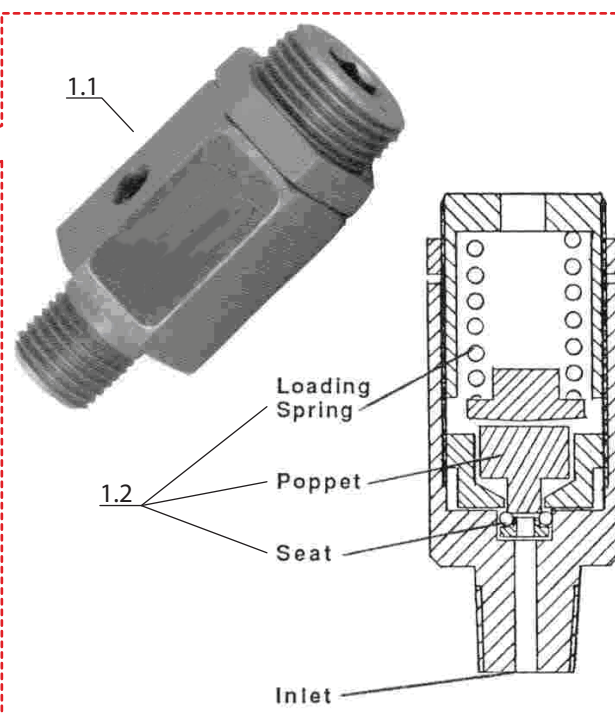
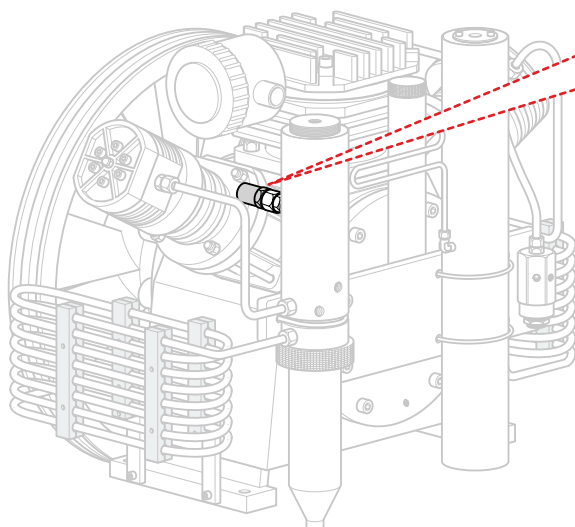
Pos.	Qty.	Code	Description
1.1	1	RV-504	FINAL SAFETY VALVE
1.2	1	RV-504-12	REBUILD KIT FOR RELIEF VALVE

## PRESSURE MAINTAINING VALVE

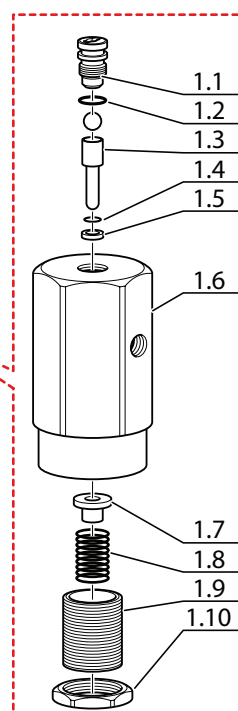
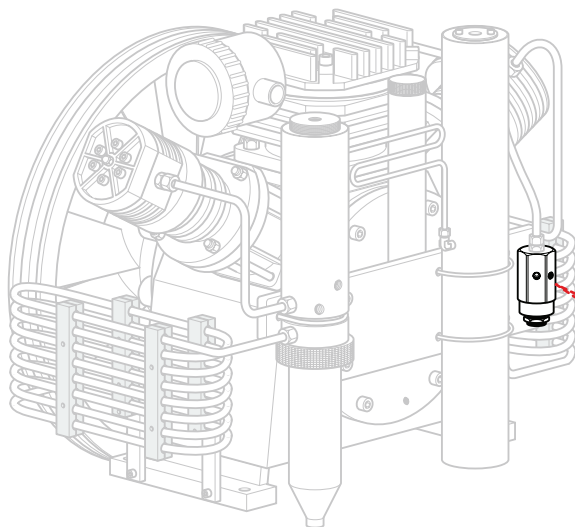
Pos.	Qty.	Code	Description
	1	13-00-0127	MANTAINING PRESSURE VALVE 1/8 - 1/4
1.1	1	13-00-0147/N1	MAINTENANCE VALVE SCREW
1.2	1	OR-2025	O RING 2025 NBR 70
1.3	1	13-00-0149/N	MAINTENANCE VALVE PISTON
1.4	1	OR-2015	O RING 2015 NBR 90
1.5	1	13-00-0158	O-RING 3050 NBR
1.6	1	13-00-0147/N/1/8NPT	MAINTENANCE VALVE BODY 1/8 NPT
1.7	1	13-00-0157	VMP PISTON SCREW SPACER
1.8	1	13-00-0166	SAFETY VALVE SPRING
1.9	1	13-00-0151/N	VMP CAP
1.10	1	13-00-0147D/N	VMP NUT

## SAFETY VALVE - PRESSURE MAINTAINING VALVE

### SAFETY VALVE



### PRESSURE MAINTAINING VALVE



## NOTES